

Manufacturers Record

Industry Construction



\$6.50 per Year
Single Copy, 20 Cents

Baltimore, Md.
MARCH 19, 1931

Unemployment Insurance

Two encouraging features in the American employe insurance movement assert themselves conspicuously in a comprehensive article on the subject in this issue of the Manufacturers Record. First, group life insurance has been widely adopted; and unemployment insurance, which includes old age pensions, is being voluntarily attempted by business concerns. Second, the movement, as far as it has gone, is being conducted by private industry and business without governmental participation. The plans being considered and attempted are business-like, with industry either bearing the cost alone, or jointly with labor. Governmental paternalism or a dole are evidently objectionable from every standpoint, as they should be, to American industrialists and to labor.

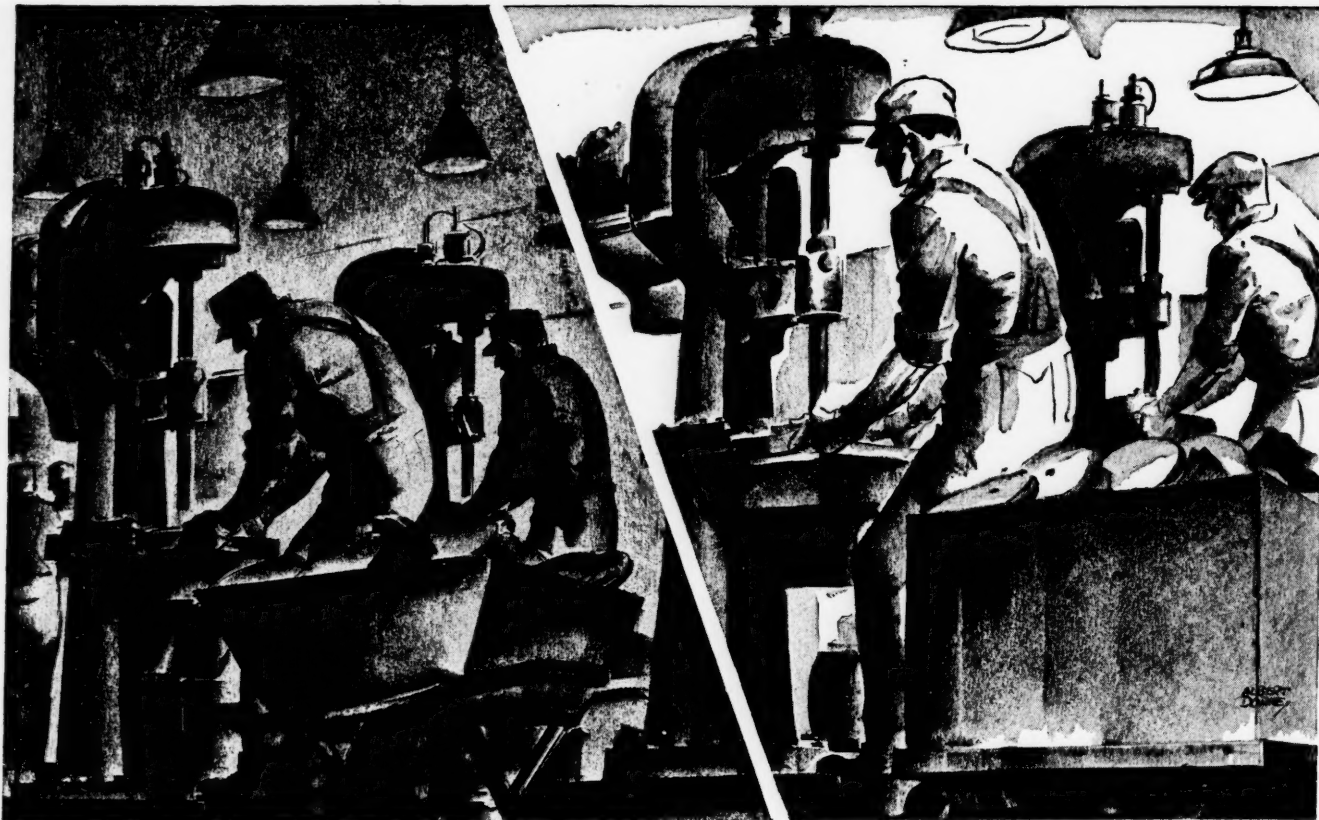
According to a survey by the Metropolitan Life Insurance Company, 150,000 American workers are covered by unemployment insurance, as of January 1. Approximately 25,000 are brought into the group at one time by 14 concerns acting in concert. Every employe of the General Electric Company in Schenectady out of work this winter or on part time has been cared for under the company's unemployment plan. These are indications of the general unemployment insurance trend. In the United States about 4,000,000 employes are covered by 450 pension operations now effective. Of these, 95,000 actually are drawing a total around \$60,000,000 this year.

"All schemes for unemployment insurance in this country are entirely voluntary and are limited to single industries or firms," says the survey. Not only is this American in principle, but also it is better from every standpoint for employers and workers and the taxpaying public. In Great Britain, government participation has cost the tax-payers nearly \$900,000,000 in 10 years, or 35 per cent of the total paid out; also, the treasury has borne the cost of "out-of-work donations" and "extended benefits." In Germany, unemployment allowances for the fiscal year 1928-1929, cost the federal treasury \$37,000,000, to which local governmental units added \$9,000,000. In Switzerland, 20 per cent is paid by the national government.

Unemployment insurance should be strictly a matter between employer and worker. The reasons for this are elemental, and involve both economic and social factors. Government participation means not only a heavier burden to individual taxpayers, but an extension of paternalism that must be abhorrent to right-thinking Americans.

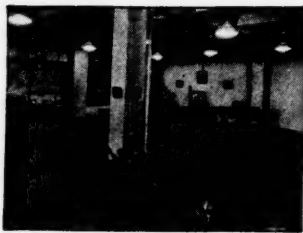
It is not the function of the government to provide employment, nor to insure against its loss.

BANISH THE *Twilight Zone*^{*} ... AND BANISH EXCESSIVE REJECTS



There is a *Twilight Zone*^{*} in industrial lighting that often contributes more to spoilage of materials than any other single factor. For the *Twilight Zone* is a deceptive half-light that masquerades as adequate illumination. Unsuspected, it continually takes its toll from industry by robbing workers of both visual and manual accuracy.

Banish this *Twilight Zone* from your business, and you can realize minimum spoilage losses. Why not test your plant for *Twilight*



In the Westinghouse Lighting Institute

A fully-equipped factory demonstrates correct illumination for modern industrial plants.

Open to visitors

Daily 9 to 5 . . . Saturday 9 to 12
7th Floor, Grand Central Palace
New York City

. . . around the corner from your hotel.

Zone and learn whether you are carrying a needless expense? Lighting Specialists from your local light and power company or the Westinghouse organization are always ready to assist in solving any *Twilight Zone* problems.

Out of the Twilight Zone

An illustrated book, "The Way Out Of The *Twilight Zone*" will be sent to anyone interested in cutting costs with light. Write Westinghouse Lamp Company, Department 203, 150 Broadway, New York, N. Y.

^{*}The deceptive half-light between obvious darkness and adequate illumination.

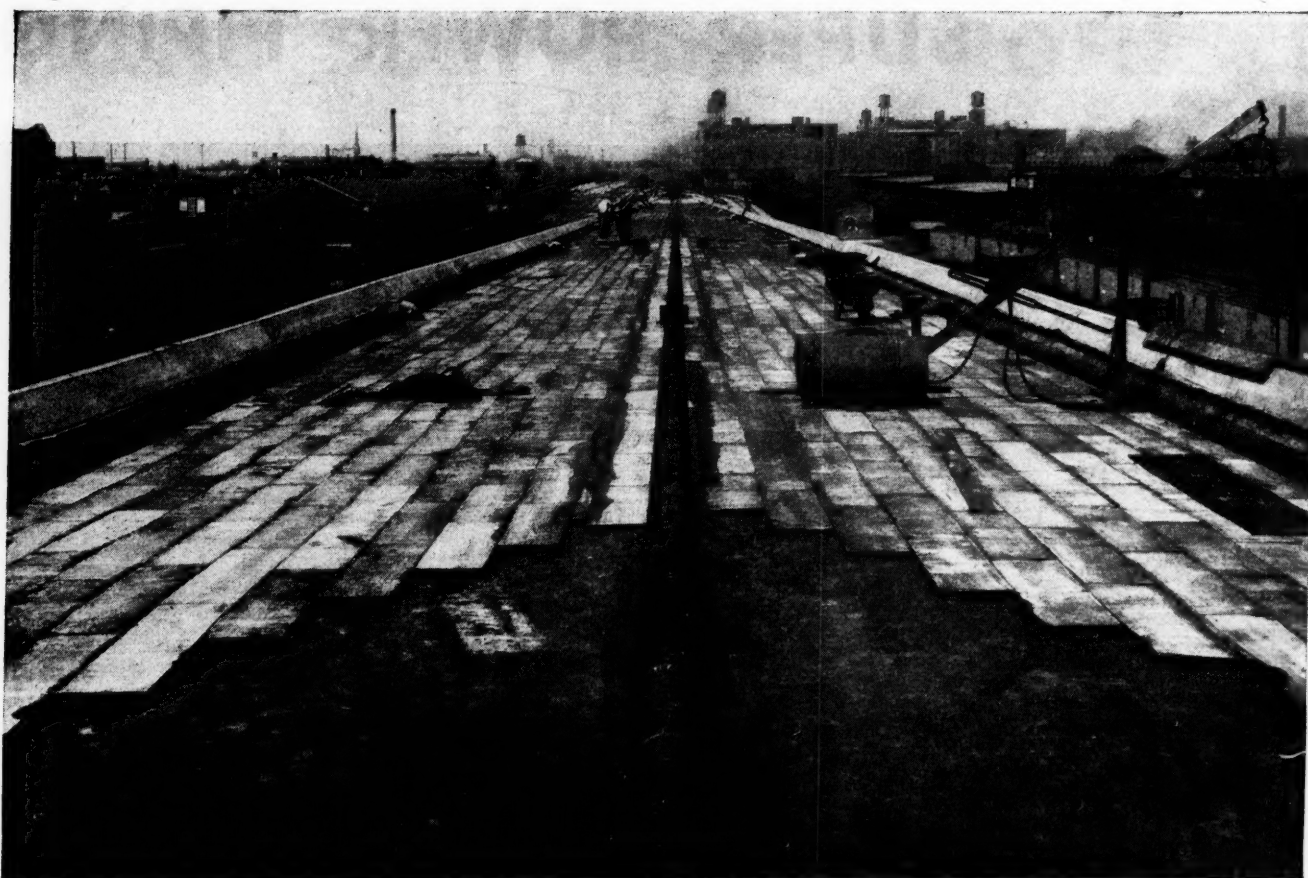
CONSULT A LIGHTING SPECIALIST ON YOUR LIGHTING PROBLEMS



Westinghouse



Entered as second-class matter at the Postoffice, Baltimore, Md., under the act of March 3, 1879.



“It’s Servicised”

Chicago, Burlington & Quincy Railroad. G. A. Wiegel, *Special Engineer*; L. W. Skov, *Special Engineer of Design*. *Waterproofing by* Luse-Stevenson Company, Chicago. *General Contractor,* W. J. Newman Company, Chicago.

That’s a guarantee of Quality Products, made from best materials, properly prepared, and delivered with dispatch. This photo shows a view of the new track elevation work carried on by the Burlington in the vicinity of 16th and Canal Streets, Chicago, on which 65,000 sq. ft. of Servicised Waterproofing Protection Course Planking was used in 1930.

Servicised Protection Course—a blanket of tough resilient material—is now used by leading railroads and prominent engineers for protection to underlying membrane, and for additional waterproofing on viaducts, bridge approaches, roofs, etc. It is composed of specially blended asphalt, combined with asphalt saturated felt, and substantially reinforced with strong, resilient fiber.

Write for detailed information, record of installations or samples.

Servicised Premoulded Products, Inc.

General Distributor for Servicised Products Corp.

53 West Jackson Blvd.

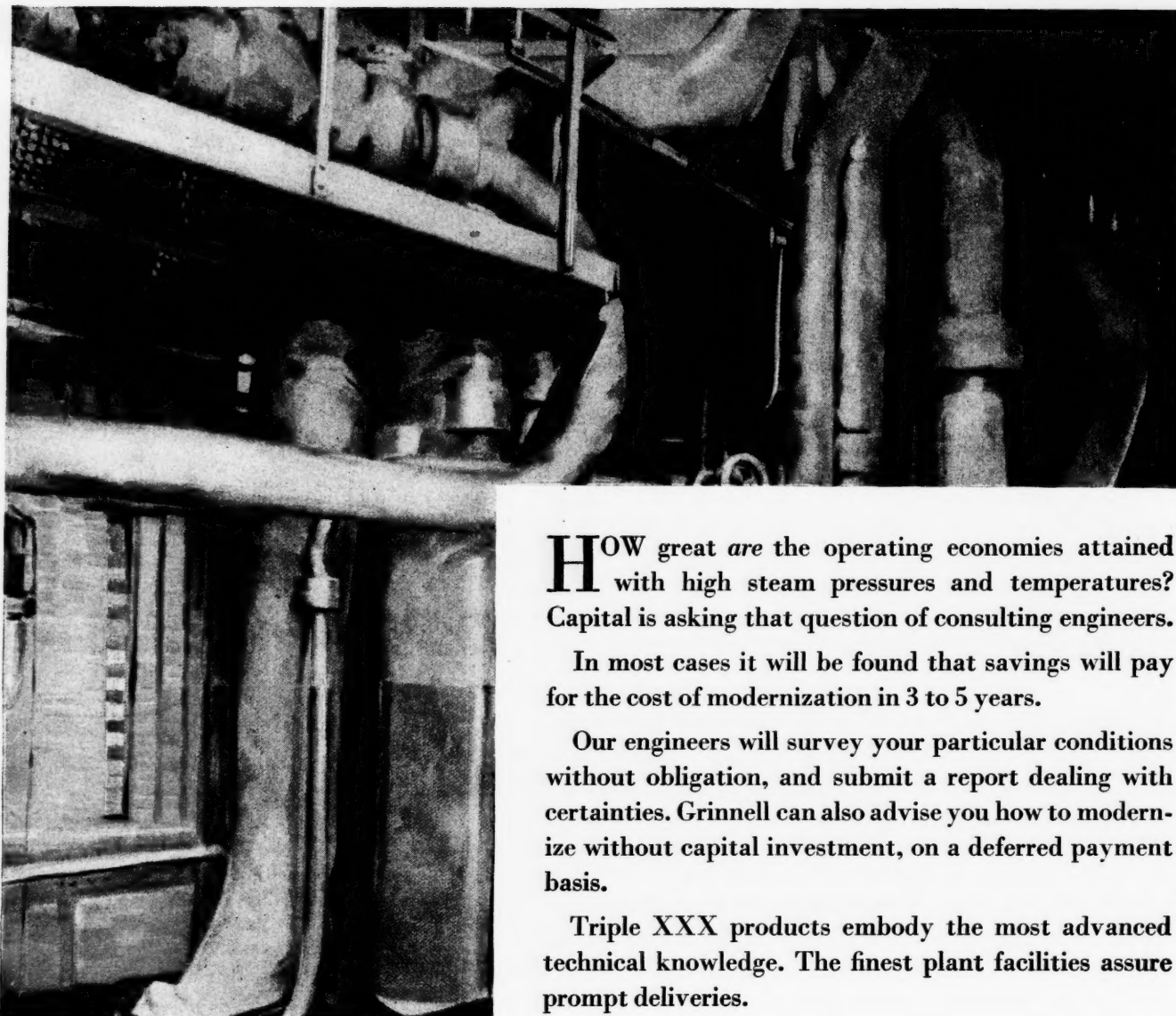
Chicago, Illinois

Bridge Planking
Industrial Flooring
Rail Filler
Sewer Pipe Materials
Expansion Joints



Servicised Protection Course For Membrane Waterproofing

SUPER POWER PIPING



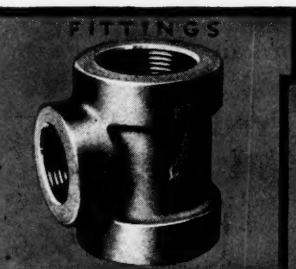
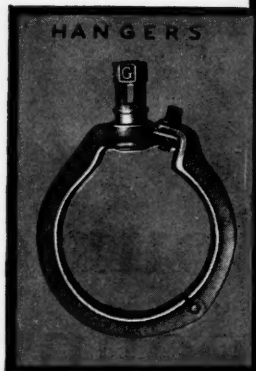
HOW great are the operating economies attained with high steam pressures and temperatures? Capital is asking that question of consulting engineers.

In most cases it will be found that savings will pay for the cost of modernization in 3 to 5 years.

Our engineers will survey your particular conditions without obligation, and submit a report dealing with certainties. Grinnell can also advise you how to modernize without capital investment, on a deferred payment basis.

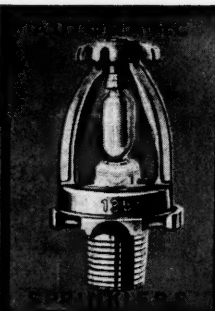
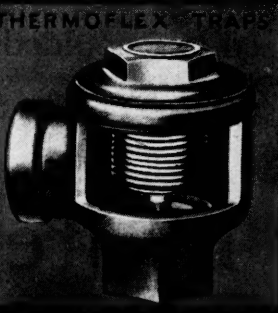
Triple XXX products embody the most advanced technical knowledge. The finest plant facilities assure prompt deliveries.

ALL THESE GRINNELL PRODUCTS WILL SAVE MONEY

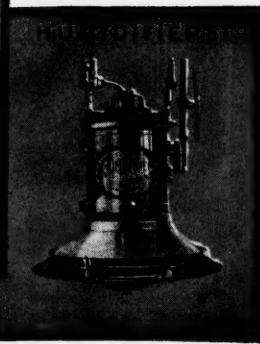


Pipe fittings, perfectly threaded, accurately machined and rigidly inspected. Pipe hangers adjustable after the pipe is up. Reduce installation costs and thereafter keep down maintenance expenses.

These traps with the famous Hydron Bellows, insure perfect operation of your steam radiators.

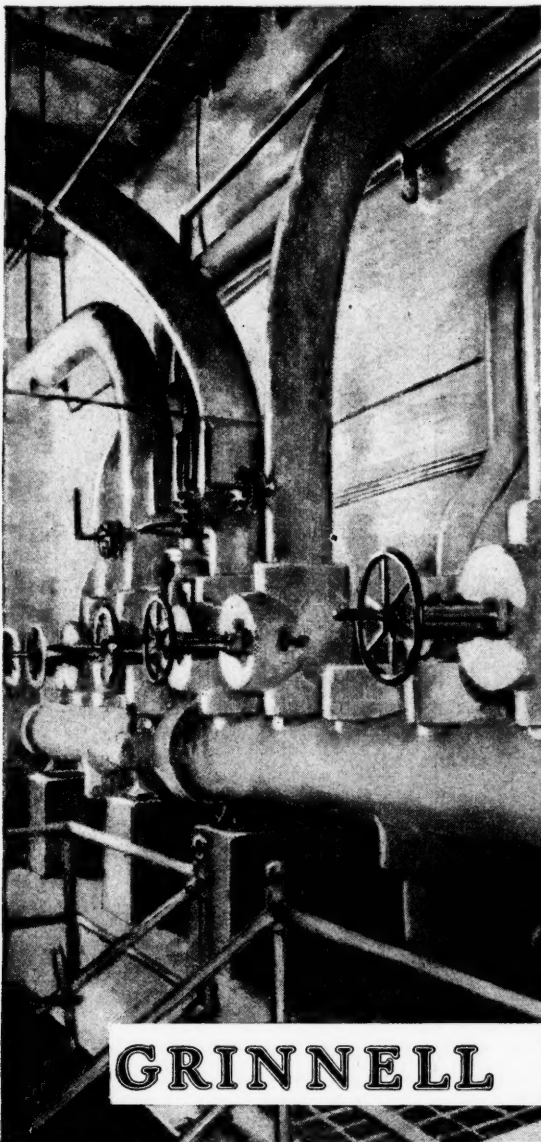


The famous Quartz Bulb Sprinkler Head. In most cases sprinklers will reduce insurance expense from 50 to 90 percent.

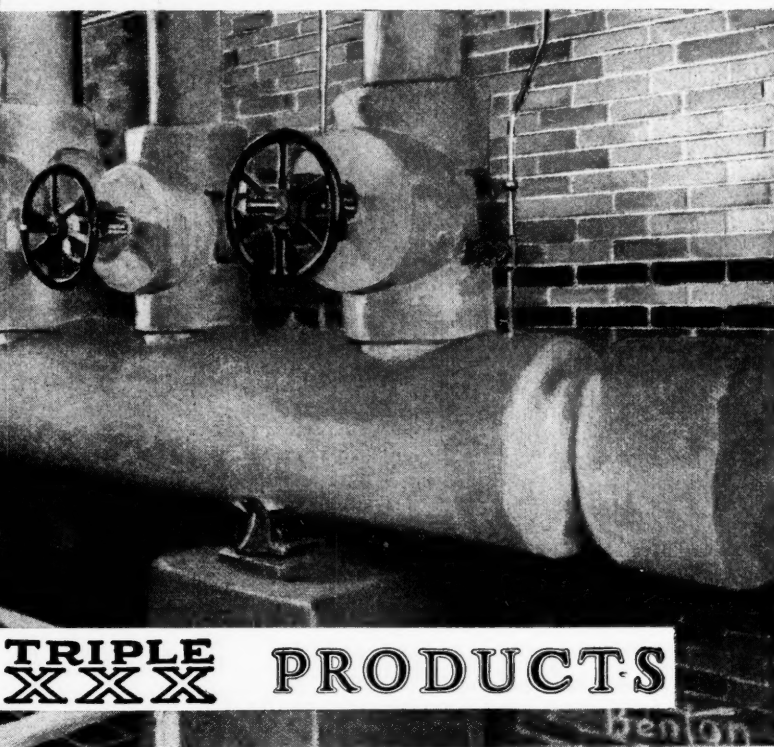


Where processes are affected by air dryness large savings can be made by proper humidification equipment.

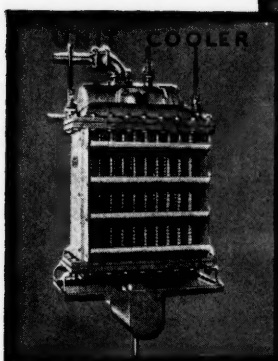
EARN SURPRISING PROFITS



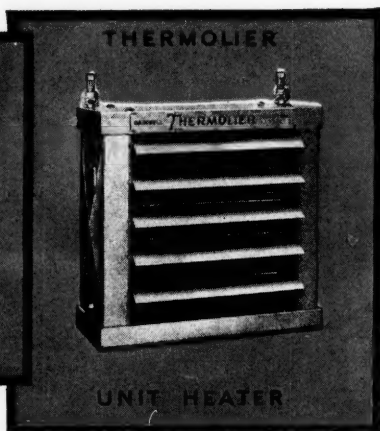
For loop bends, welded headers, forged hangers, coils, and power pipe with extra-heavy flanges, specify Triple XXX quality. Our engineers will survey your conditions without obligation. Address Grinnell Company, Inc., Executive office, Providence, R. I. Offices in principal cities. Plants and branches in strategic centers.



GRINNELL **TRIPLE XXX** PRODUCTS



A revolutionary improvement over pipe coils for room cooling and refrigeration. It replaces more than ten times its weight in pipe coils.

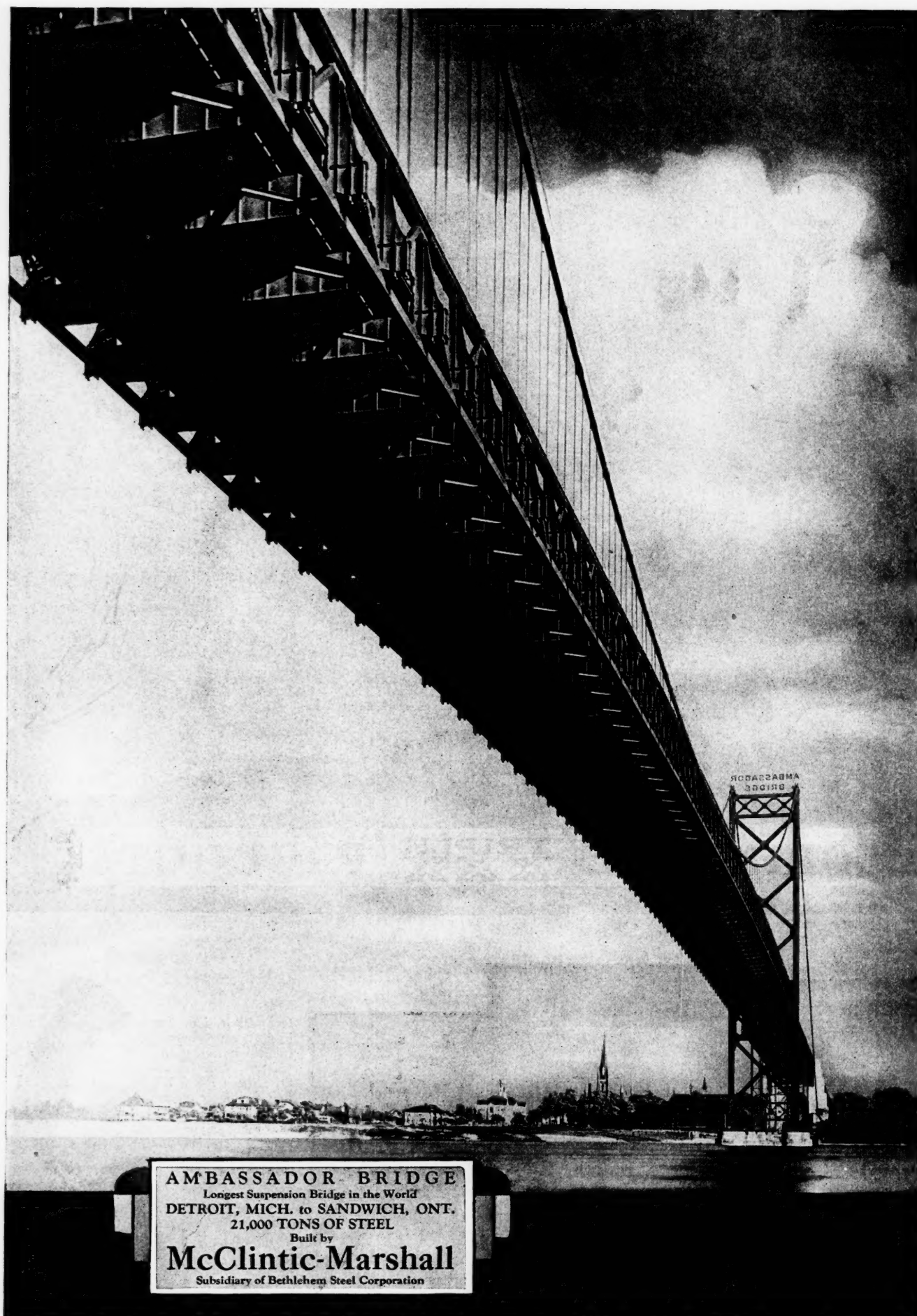


A better and cheaper means of heating many types of commercial buildings. Many heating systems can be modernized almost over-night with a tremendous saving on fuel.



Pipe fabrication, lap joints, loop bends, forged hangers and welded headers comprise the Triple XXX line for Super Power work. By modernizing and using high temperature steam your yearly savings will often run to five or six figures.





AMBASSADOR BRIDGE
 Longest Suspension Bridge in the World
 DETROIT, MICH. to SANDWICH, ONT.
 21,000 TONS OF STEEL
 Built by
McClintic-Marshall
 Subsidiary of Bethlehem Steel Corporation

MONSARRAT AND PRATLEY, MONTREAL
 MORAN AND PROCTOR, NEW YORK CITY

Consulting Services by:

LEON S. MOISSEIFF, NEW YORK CITY
 SMITH, HINCHMAN AND GRYLLS, DETROIT

Approval and Inspection by: MODJESKI AND CHASE, NEW YORK CITY

TENNESSEE STEEL

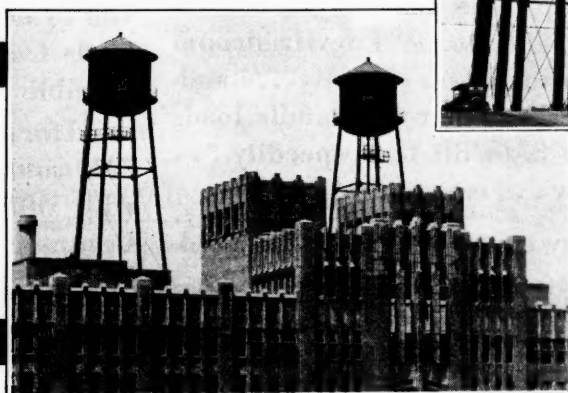
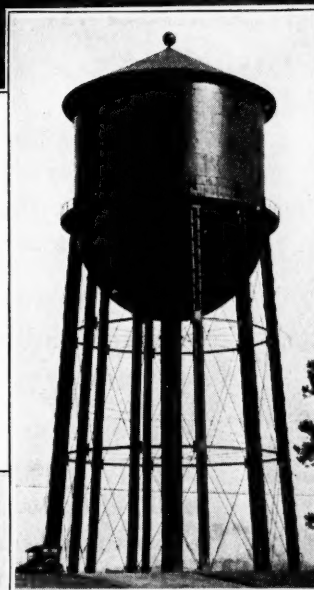
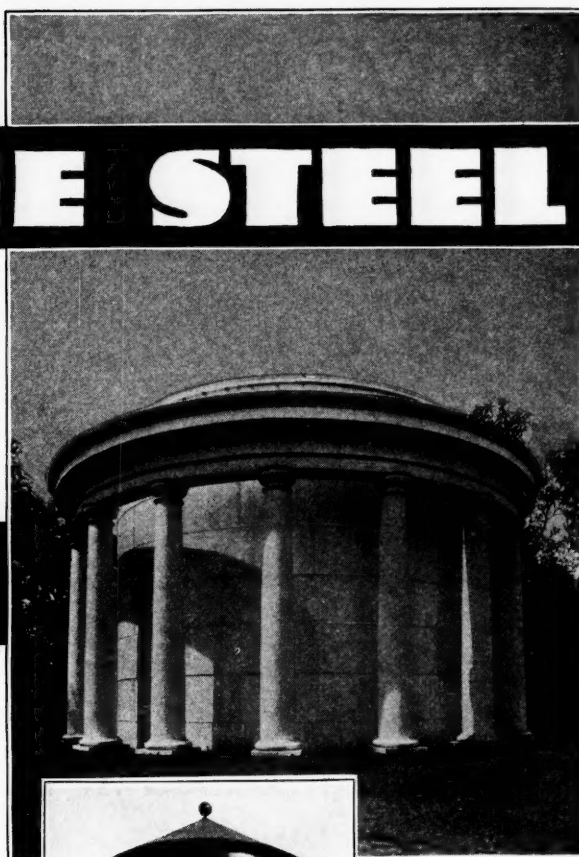
for Surface or Elevated

TANKS

When the tank-builder places emphasis on design and workmanship and the steel-producer places emphasis on quality--the tank will be *right*.

Remarkably attractive and convincing evidence of this fact appears in the accompanying illustrations of surface and roof tanks by Chattanooga Boiler & Tank Company and elevated tanks by R. D. Cole Manufacturing Company.

These and countless others constructed from TENNESSEE PLATES AND SHAPES.



Products: Structural Shapes, Plates, Bars and Small Shapes, Sheets, (Blue Annealed, Black and Galvanized), Rails and Accessories, Forgings, Castings, Semi-finished Materials, Pig Iron.



Tennessee Coal, Iron & Railroad Company

General Offices: Brown-Marx Building, Birmingham, Ala.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

QUALITY
PRODUCTS
—
Dependable
Service

AMERICAN BRIDGE COMPANY
AMERICAN SHEET AND TIN PLATE COMPANY
AMERICAN STEEL AND WIRE COMPANY
CARBIDE STEEL COMPANY

COLUMBIA STEEL COMPANY
CYCLONE FENCE COMPANY
FEDERAL SHIPBUILDING AND DRY DOCK COMPANY

ILLINOIS STEEL COMPANY
MINNESOTA STEEL COMPANY
NATIONAL TUBE COMPANY

OIL WELL SUPPLY COMPANY
THE LORAIN STEEL COMPANY
TENNESSEE COAL, IRON & R. R. COMPANY
UNIVERSAL ATLAS CEMENT COMPANY

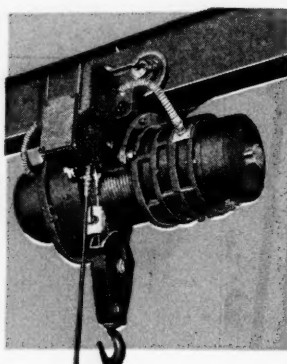
Pacific Coast Distributors—Columbia Steel Company, Rum Building, San Francisco, Calif. Export Distributors—United States Steel Products Company, 30 Church Street, New York, N. Y.

Have your shop loads increased?

Greater Capacity "Milwaukee" Cranes Can be Installed in Your Present Buildings

2 FEET 11 1/2 INCHES

2 ft. 11 1/2 in. headroom for 3 ton-30 ft. span or 5 ft. 3 in. for 30 ton-60 ft. span



Greatest Value in Electric Hoists

A most exacting comparison proves that "Milwaukee" Hoists offer greatest value at no extra cost. Full roller bearing . . . push button control . . . and other outstanding features. Ask for Bulletin 202.

MANY companies are manufacturing heavier products than when their original crane equipment was installed . . .

Which means that cranes may be overloaded. This is apt to prove dangerous and expensive.

In the same space occupied by your present cranes, you can install "Milwaukee" Low Headroom Units of greater capacity . . . standard cranes that will handle loads from 3 to 30 tons speedily . . . safely . . . economically.

In new construction this low head-

room effects substantial savings in building cost.

Remember, "Milwaukee" gives you full roller bearing construction . . . easy starting, quick acceleration, low cost maintenance and saving in power.

Maximum high hook lift, combined with low headroom, enables you to use "Milwaukee" units for loads from 3 to 30 tons in least possible space.

Send for specifications . . . and let a "Milwaukee" engineer show you why "Milwaukee" Roller Bearing Cranes give you greater value.

HARNISCHFEGGER CORPORATION
Milwaukee Crane & Hoist Division
4427 W. National Ave., Milwaukee, Wisconsin



Traveling Cranes up to 300 Tons . . . Low Headroom Cranes 3 to 30 Tons . . . Single I Beam Cranes 1/4 to 5 Tons . . . Monorail Hoists (all types) 1/4 to 10 Tons . . . Lumber Cranes . . . Bucket Cranes . . . Corduroy-Crawler Cranes . . . Gantry Cranes . . . Single Line Buckets.

MILWAUKEE

Greater durability in the transmission of your machine no matter what its *speed*

YOU'VE applied roller bearings wherever possible in the design of the machines you manufacture . . . for high speed, less friction, greater durability, and greater satisfaction to the customer.

The success, everywhere, of the roller-bearing principle is responsible for the ever-increasing trend toward Diamond High Speed Drives . . . and is ample warrant for your use of these Drives in your machines. Diamond Roller Chain Drives stand alone in their immunity to wear, other adverse conditions, and trouble. And their quiet, almost-frictionless action assures a maximum of power transmitted, a minimum of power wastes.

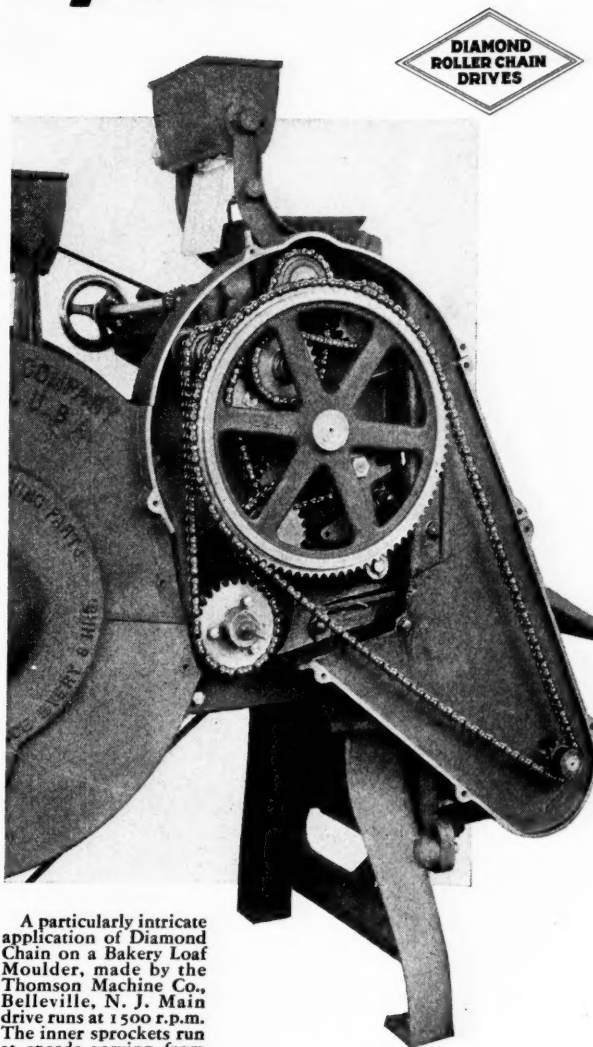
We invite you to investigate the *eight points* of Diamond application . . . *eight* classes of transmission employment where the inherent advantages of Diamond Roller Chain are of particular value to the machine-designer.

Quiet and Compact

Diamond High Speed Roller Chain is of especial interest to machine-designers. It runs over and under sprockets in either direction; often eight to ten sprockets drive off one chain. It is exceptionally *quiet . . . compact*. This superior flexibility, applicability, durability, efficiency often help in the simplification of a design . . . often provide substantial new selling points. The *eight* points of application in machine design are described and illustrated in the new edition of "*Simplifying and Improving Machine Design*"; a copy will be sent to you upon receipt of the coupon.

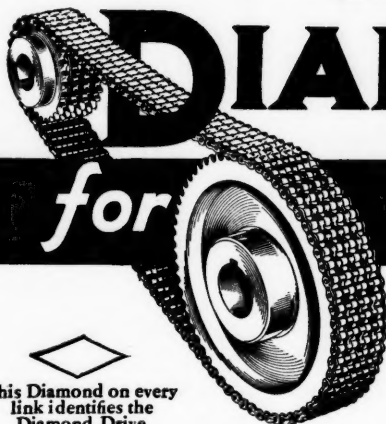
DIAMOND CHAIN & MFG. CO.
411 Kentucky Avenue, Indianapolis, Ind.
Offices and Agents in Principal Cities

**ROLLING
SURFACES
DISCOURAGE
WEAR**



A particularly intricate application of Diamond Chain on a Bakery Loaf Moulder, made by the Thomson Machine Co., Belleville, N. J. Main drive runs at 1500 r.p.m. The inner sprockets run at speeds varying from 200 to 300 r.p.m., the chain running over and under the sprockets.

DIAMOND
ROLLER CHAIN
DRIVES



DIAMOND ♦ DRIVES

for Every Industrial Need

DIAMOND CHAIN & MFG. CO., 411 Kentucky Avenue, Indianapolis, Ind.
Send me a copy of Booklet 104B "*Simplifying and Improving Machine Design*."

Name

Business

Address

City State

This Diamond on every link identifies the Diamond Drive

(A-4160)



He no longer flies alone!



Formerly a man a mile above the earth was shut off more completely than if he were

in the heart of Africa or the depths of the frozen north.

Now the Western Electric radio telephone ends that isolation. The flier whose plane is equipped by Western Electric is always in touch with ground stations, and he flies with greater dispatch and greater safety.

This telephone for airplanes grew out of many years' experience in making telephones and other apparatus for the Bell System. It is one more example of Western Electric's skill in the art of voice reproduction.

Western Electric

Makers of your Bell telephone and leaders in the development of sound transmission



The nation's leading airlines safeguard their passengers with Western Electric Airplane Radio Telephone



WORK in an industrial plant is often done by a trained operator who has become virtually an automaton. He accomplishes various acts almost unconsciously or in apparent abstraction. He's a mechanism attached to his machine—a Robot. "He can do his work blindfolded," says a manager. "Why bother to have good illumination here?"

But—the production of just such workers has many times been proved to increase from 10 to more than 15 per cent



The Cooper Hewitt spectrum shows that more than 90% of its luminosity is made up of the cool, yellow-green rays — the best-seeing light rays known to science.

when they are given adequate and proper light to work under. Naturally! Because more than 70 per cent of *all* our actions—automatic or not—are directed and timed by vision. Poor light, too,

means eye-fatigue, nerve-fatigue, sleepiness, inefficiency.

This is why COOPER HEWITT mercury-vapor illumination improves both welfare and production conditions in every plant where it is installed. Let us *prove* this by a trial installation. General Electric Vapor Lamp Co., Hoboken, N. J.

GENERAL  ELECTRIC
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

(See next page)

Cheaper to prevent than to pay for—



Hundreds of industrial accidents happen like this:

The power was shut off. Two workmen started to disassemble one of six semi-automatic, group driven machines.

A repairman, cleaning the others, needed a certain tool. A bright, bare drop-lamp, suspended as usual just above the machine's working level, threw its glare into his eyes—and cast the dark shadow of the machine-frame across the safety switch. He reached for the tool and grasped—the switch.



Result: A part of one workman's finger severed; the other's foot bruised and his arm cut.



Adequate and proper illumination, the insurance company reported, almost surely would have prevented this accident—just as it would prevent thousands of others throughout industry.



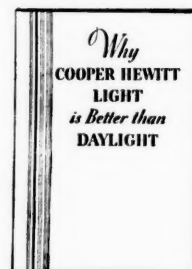
BETTER THAN DAYLIGHT

And who paid for this accident? Well, in compensation and medical charges the insurance company paid—\$317. In uninsured and uninsurable damage to machines, plus idleness, plus interrupted operating schedule, the employer who was “economizing” on his lighting bill paid—\$1,700.



On the other side of this page you may read how Cooper Hewitt mercury-vapor illumination can prevent accidents in industrial plants by providing light that is “better than daylight.” In hundreds of modern plants today Cooper Hewitt light is *proving* how much cheaper it is to prevent than to pay for accidents—in addition to increasing production, reducing spoilage and otherwise improving efficiency generally. General Electric Vapor Lamp Co., 819 Adams St., Hoboken, N. J.

MANY other advantages of Cooper Hewitt illumination are given in a simply written booklet “Why Cooper Hewitt Light is Better than Daylight” which will be sent gladly upon request.



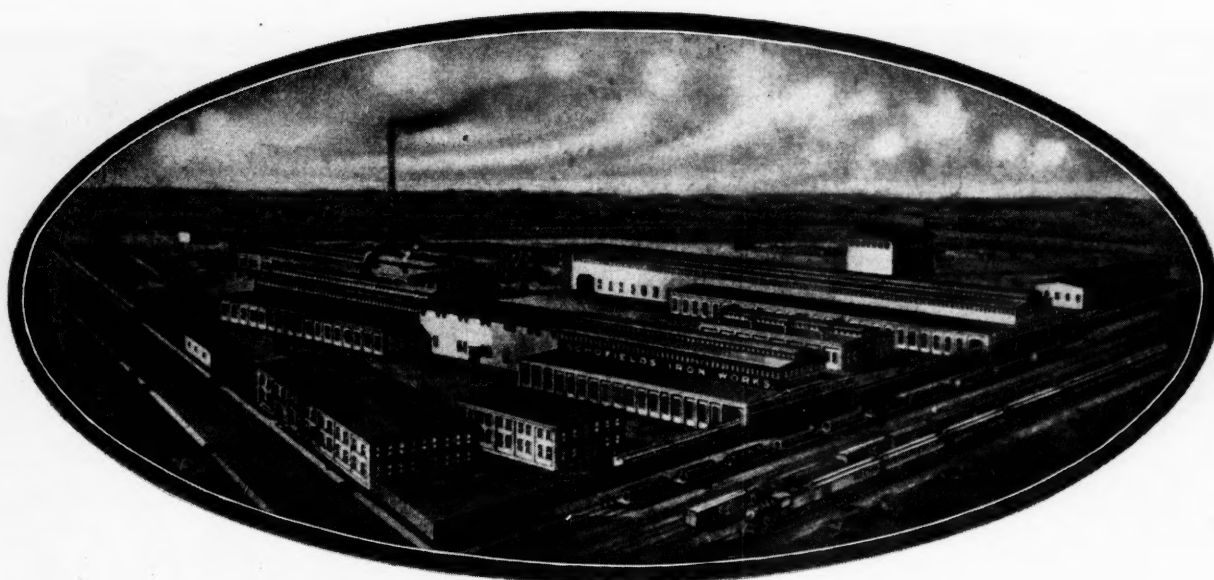
Join us in the General Electric Program, broadcast every Saturday evening on a nation-wide N.B.C. network

GENERAL  ELECTRIC
VAPOR LAMP COMPANY

(see preceding page)

(Formerly Cooper Hewitt Electric Company)

418A © G.E.V.L. Co., 1931



. . . 79 Years of Continuous Service

Manufacturers of
Pumps
Acid Tanks
Incinerators
Dredge Pipe
Steel Buildings
Rotary Dryers
Steel Plate Work
Municipal Castings
Grey Iron Castings
Boilers and Engines
Steel Storage Tanks
Seed and Grain Tanks
Steel Barges and Boats
Elevated Water Tanks

IN 1852 this business started as a little two-man foundry; today, the plant covers seven acres.

We serve not only the South and Southwest, but also Cuba, Mexico, Central and South America.

For anything made of iron or steel, we are prepared to figure with you.

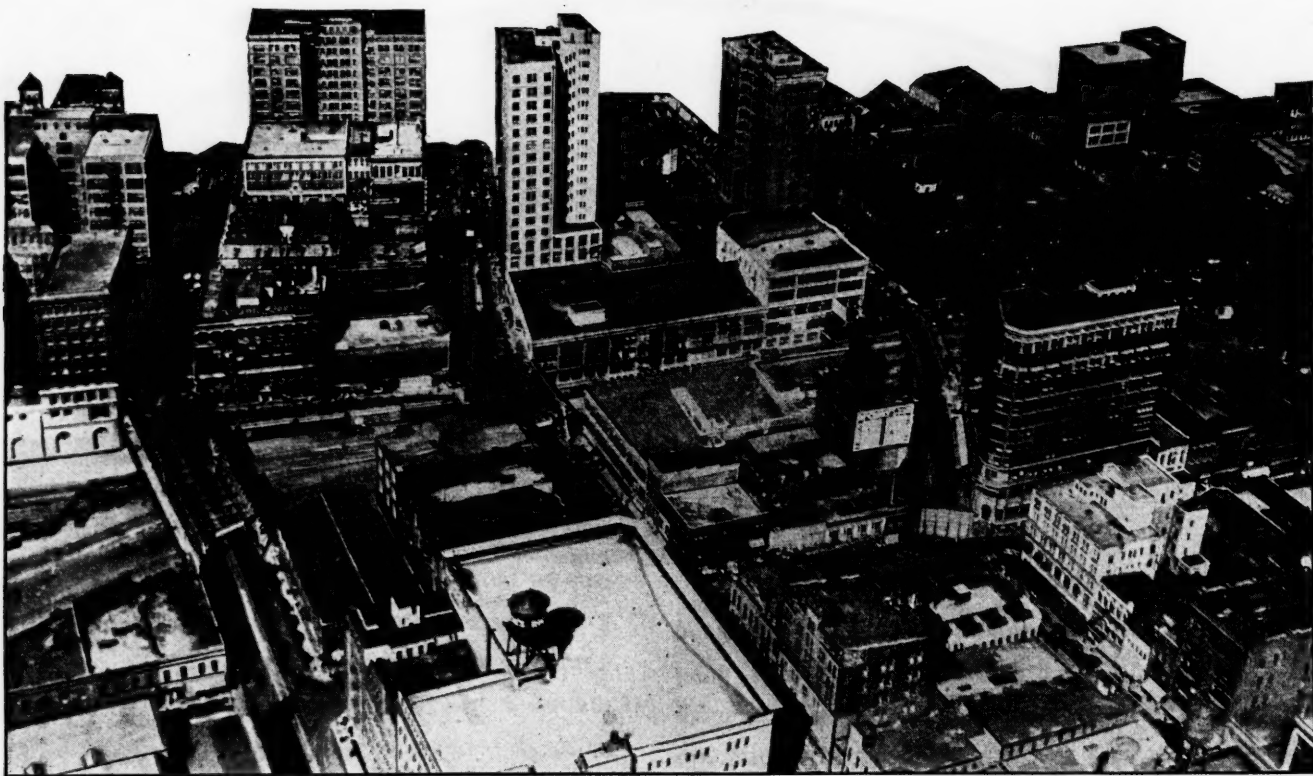
A background of seventy-nine years of experience enables us to give dependable advice on all phases of contract work.

Our Engineering Department will send experts to you and help solve your problems on your ground.

J. S. Schofield's Sons Co.
Macon, Georgia, U. S. A.

ESTABLISHED 1852

INCORPORATED 1900



A sky-view of Atlanta, Ga., shows many types of buildings; but they all have the same need for good insulation at the roof.

Right under the Southern Sun *roofs need* **SOLID-INC** INSULATION

Armstrong's

 Product

WHAT if the sun does beat down on Southern roofs? Even where the sun's scorching rays are hottest, roofs can be adequately and economically insulated with Armstrong's Temlok. And in all climates this efficient fibre board roof insulation assures comfort even on top floors and effects fuel-savings.

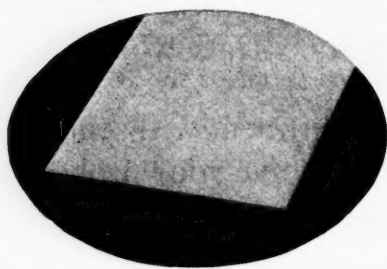
Armstrong's Temlok is made (and recommended) in a solid-inch layer. It's recommended for Southern roofs—and Northern roofs, too.

But sometimes building owners prefer insulation in laminated half-inch layers.

Temlok meets this need—as well as other needs. It is made in half-inch and solid-inch thicknesses. It can be furnished in laminated half-inch layers, or in built-up layers to desired thicknesses greater than an inch.

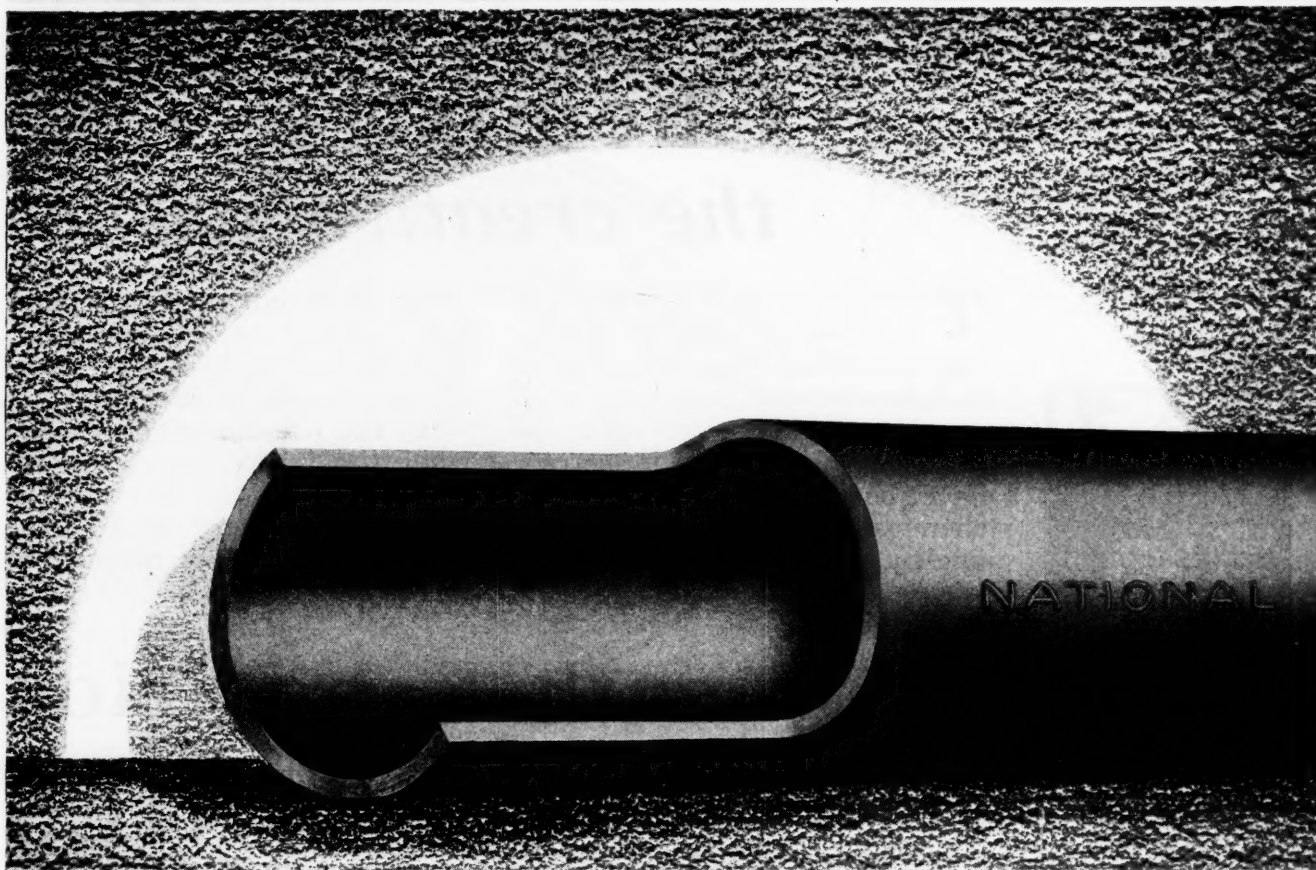
Armstrong's Temlok has other advantages to offer you. It has low conductivity, structural strength, providing a strong, firm base for roofing, low moisture absorption. All of these advantages are available at low cost.

Write for complete information and a sample of Armstrong's Temlok. Armstrong Cork & Insulation Company, 944 Concord St., Lancaster, Pennsylvania.



Armstrong's Temlok

Low-cost, Efficient Insulation for Roofs



What every Pipe Buyer should know

Whether you buy, specify or install pipe or are in any way responsible for its selection, the fact that there is a difference in today's pipe as compared with pipe of the past, should have your careful consideration. It will be well, also, for you to know that this difference is brought about by the methods used in manufacture.

To the casual observer there is little difference. From the *outside* all pipe looks about the same—but don't stop here. Examine it carefully. You will find that the *inside* surface of NATIONAL Scale Free Pipe is smooth and clean—free from scale. Why? Because it is *made Scale Free*. And that's the difference every pipe buyer should know.

Years of study and experiment have proved that corrosion, particularly "pitting", is due to mill-scale on the inside surface of pipe. Scale being electronegative to pipe metal, sets up galvanic action (corrosion) around the scale areas, and consequently "pitting" follows, thereby shortening the life of the pipe.

Having definitely proved this fact, National Tube Company set out to find a remedy and, after an intensive study, developed the special and patented Scale Free Process (applied to NATIONAL Pipe, butt-weld sizes $\frac{1}{2}$ to 3-inch) to eliminate this welding scale—thereby making a real difference in pipe. And this difference is one of the reasons why NATIONAL is—

America's Standard Wrought Pipe

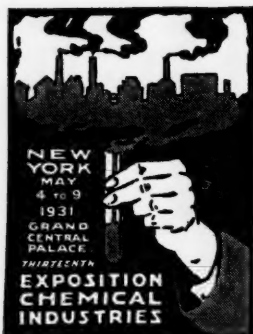
NATIONAL TUBE COMPANY · PITTSBURGH, PA.

Subsidiary of United States Steel Corporation



NATIONAL SCALE FREE PIPE

Chemistry— *the creative science*



THE Chemical Industries are basic—upon them all others depend. What chemistry creates and the chemical industries produce, revolutionizes all other industries. Established industries have been superseded by one chemical idea developed to its finality. Modern competition is largely the competition of men

using materials and machines and chemical inventiveness. This Exposition brings all these things together that all may see what the present produces and what the future promises. Be prepared for your future by a study of the present and the trends which will be revealed at this Exposition.

Thirteenth Exposition CHEMICAL INDUSTRIES

Management International Exposition Company

5205



DO YOUR Paper Boxes *Bespeak of Quality?*

The attractiveness of the box in which your product is packed oftentimes influences a sale.

The very appearance of Old Dominion boxes bespeaks of quality, for these are "individualized" boxes, made especially for your requirements, and with your own design on them you have a quality box that commands and gets attention. Our five centrally located plants can give you prompt service on your box requirements—any type or size. Samples and quotations given without obligation.

OLD DOMINION BOX COMPANY, INC.
Lynchburg, Va.

Winston-Salem, N. C. Burlington, N. C. Ashboro, N. C. Charlotte, N. C.

quality OLD DOMINION
Paper Boxes



**NO-NOX
ETHYL**

Stops Knocks

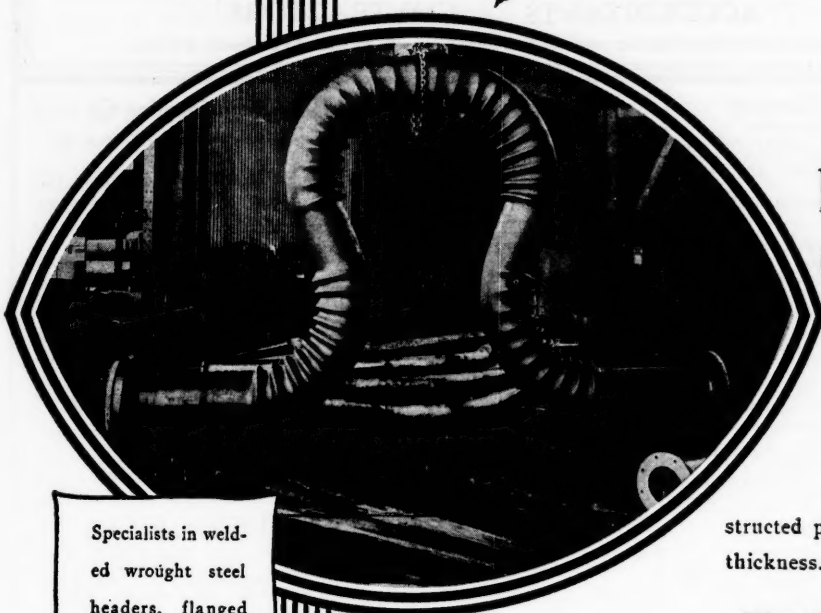
...eliminates even the faintest click or ping. This assures a lightning getaway in traffic with a smooth fast pick up—makes traffic a pleasure.

●
At the
Sign of
the
Orange
Disc

NO-NOX ETHYL has an extremely low end point which gives it an instant vaporizing quality for quick easy starting on coldest days.

GULF REFINING CO.

When space is at a premium in your POWER PLANT use PITTSBURGH PIPING CREASED BENDS



Specialists in welded wrought steel headers, flanged iron and steel fittings, pipe bends and fabricated piping for power plants.

In addition to the saving of space, the creases, which are formed on the outside diameter of the pipe, maintain the full opening of the pipe throughout. The method by which these bends are constructed permit the wall of the pipe to remain the same thickness. Write for additional information.

Pittsburgh Piping & Equipment Co.
Pittsburgh, Pa.

New York
220 Broadway

Cleveland
Ulmer Bldg.
Detroit, General Motors Bldg.

District Offices:

Chicago
Peoples Gas Bldg.

Indianapolis
Occidental Bldg.
Boston, 10 High St.

Houghton, Mich.
Dee Bldg.



THE LAST WORD IN PIPING FOR POWER PLANTS

CAST IRON PIPE - AND FITTINGS -

American Cast Iron Pipe Company
Birmingham, Ala.
SALES OFFICES IN PRINCIPAL CITIES

GLAMORGAN PIPE & FOUNDRY CO.

GENERAL FOUNDERS AND MACHINISTS
LYNCHBURG, VA.

One-Fifth
The
Weight of
Cast Iron
Pipe



One-Third
The
Weight of
Wrought
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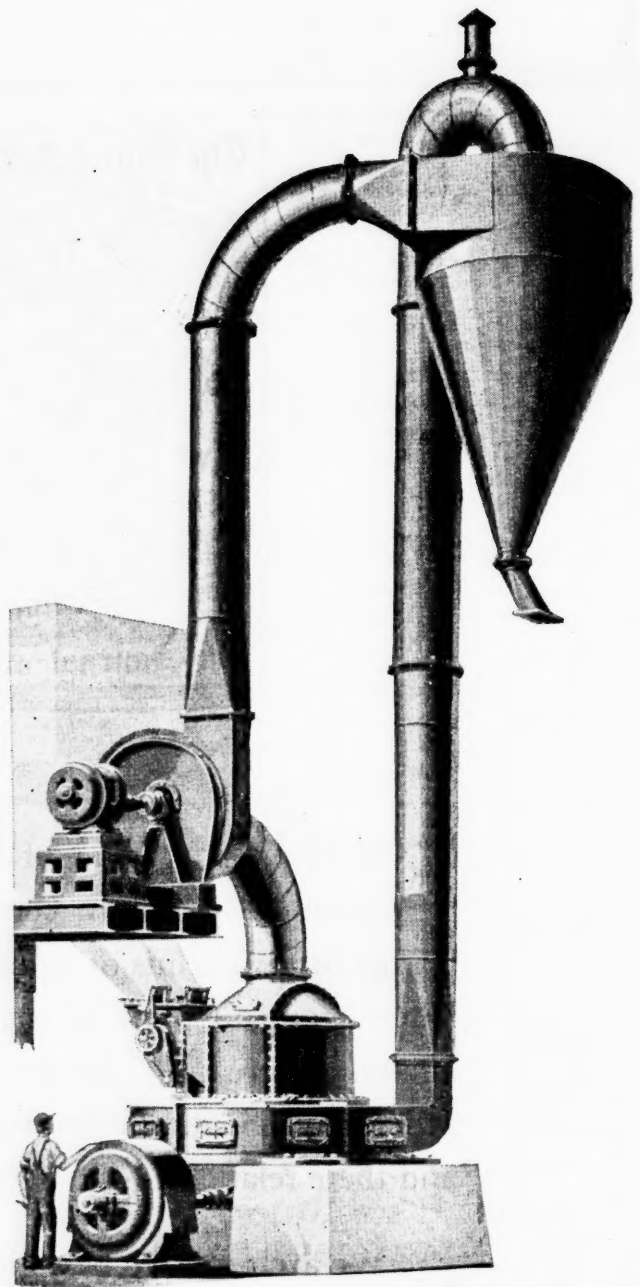
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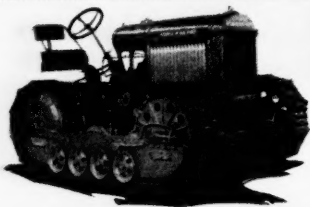
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Vol. XCIX No. 12 }
Weekly }

BALTIMORE, MARCH 19, 1931

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Better Days for Bituminous

STIMULATION of an enormous industry and adequate utilization of a huge national asset are planned through an international conference on bituminous coal, to be held in November, at Pittsburgh, Pa. The announced purpose of the gathering is to find new uses for soft coal. The benefits to industry as a whole from such a conference are obvious. In this meeting the South has a vital interest because of its enormous coal resources and its productive capacity.

Waterpower, natural gas and oil are formidable rivals of bituminous coal, and this competition is reflected in the falling off in mine production. A study of new uses and of improved processes of combustion, therefore, will tend to broaden the market for this vital resource.

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remain in the ground in the United States. Of this, 550,436,000,000, or about 25 per cent, is within the South. In dollars, this value is enormous; in terms of productive power, the value is incalculable.

Twelve Southern states contribute to the total as shown in the accompanying table.

The South produced 248,032,000 tons of coal, or 46 per cent of the country's bituminous output in 1929.

In close relationship to Southern coal reserves and production are the activities of Southern industry, using power generated from the four major sources. Horsepower in Southern manufacturing in 1927 aggregated 7,700,873, which was 19.6 per cent of the national total. Part of this primary horsepower was divided approximately as follows: Steam engines, 2,291,000, or 22.6 per cent of the total for the country; steam turbines, 1,111,000, or 16.4 per cent.

The South is peculiarly fortunate as an area blessed in abundance with the four main sources of power: Coal, streams, petroleum and natural gas. The development of the waterpower and expansion in the use of oil and natural gas in the past decade or so have retarded the normal increase in the consumption of coal. Keen competition between the different modern sources of fuel and power is reflected in world energy production, says a survey by the National Industrial Conference Board. From 1913 to 1928, the production of crude oil power increased 243 per cent; hydro-electric power, 162 per cent; natural gas, 133 per cent; coal, 5 per cent. Yet, "at present, coal is still by far the most important source of energy," the report finds.

Depression of the coal industry in the older mining areas is attributed by this survey to four major causes: (1) Increased output of useful energy per ton of coal; (2) increased coal production in new mining areas in both the United States and Europe; (3) rapid expansion in production and consumption of oil and natural gas, and (4) growing development of hydro-electric power.

From the first cause mentioned, it appears that coal has been in competition with itself, as well as with

BITUMINOUS COAL RESERVE

States	Stock in Ground to 1930 Tons	Production to 1930 Tons
Alabama	67,570,000,000	541,988,000
Arkansas	1,486,000,000*	63,860,000
Georgia	933,000,000	10,686,000
Kentucky	123,327,000,000	877,008,000
Maryland	8,043,000,000	226,145,000
Missouri	84,000,000,000	183,733,000
North Carolina	68,000,000	1,118,000
Oklahoma	54,951,000,000	120,516,000
Tennessee	26,665,000,000	215,852,000
Texas	9,200,000,000†	51,756,000
Virginia	21,649,000,000	273,915,000
West Virginia	152,544,000,000‡	2,415,900,000
Total	550,436,000,000	4,982,477,000
United States	2,230,000,000,000	26,126,225,000

*Also has 230,000,000 tons of anthracite.

†Also has 23,000,000,000 tons of lignite.

‡Also has 500,000,000 tons of anthracite.

its three so-called rivals. Improved combustion methods, for instance, include recovery of heat from waste gases and the saving of gases in by-product coke ovens. In the last analysis, however, it fairly may be said that improvement in combustion processes will promote the use of coal, and the purported intra-industry competition cited by the survey will become a stimulant.

Among the subjects on the program of the prospective conference are: Carbonization, liquefaction and gasification of coal; by-products; the mechanism of combustion; cleaning of coal and its preparation for the market; pulverized fuel; power plants; domestic heating. A list of more practical topics for constructive consideration hardly could be framed.

As sponsors for the conference are such outstanding men as Secretary Mellon of the Treasury, Walter C. Teagle, head of Standard Oil; Gerard Swope, president of the General Electric Company; James A. Farrell, president of the United States Steel Corporation; John Hays Hammond, renowned mining engineer; Samuel Insull, prominent in public utilities; Dr. Frank B. Jewett, president of the Bell Telephone Laboratories, Inc.; F. A. Merrick, president of the Westinghouse Electric & Manufacturing Company; Auguste G. Pratt, president of the Babcock & Wilcox Company; H. B. Rust, president of Koppers Company, and Matthew S. Sloan, president of the New York Edison Company. All these men are connected with industries directly or indirectly interested in coal and coal by-products.

Better days for bituminous no doubt are in sight, and the South will profit through stimulation of the industry.

Oil and Gas Storage

NEWLY devised conservation methods for oil and natural gas, through storage in semi-depleted wells, should mean much to the South in prevention of waste in its enormous fields of these natural resources. The Union Oil Company of California reports that it has run oil and gas from one field to another for storage with success and profit. The company says it has disposed of 3,000,000,000 cubic feet of natural gas and 750,000 barrels of oil in this manner.

Natural gas production in the South runs to approximately 1,100,000,000,000 cubic feet a year, out of 1,600,000,000,000 for all the United States. The value of the Southern production is \$70,500,000 a year in the national total of \$140,000,000. Southern petroleum production runs over 610,000,000 barrels, out of 1,000,000,000 barrels for the entire country.

While production methods in the South are modern and of approved type, yet the curtailment of hitherto unpreventable waste by the method of storage in depleted wells should be an important factor in the conservation program of this section.

More Reassuring News

THE MANUFACTURERS RECORD called attention more than a month ago to the gross exaggeration of conditions in the drought areas, as published in some newspapers outside the South. There are now being issued reports confirming the position we took at that time. It is to be hoped that those papers and magazines which have been featuring stories that exaggerated conditions will now give equal prominence to the actual facts.

The crop failures in some areas did cause many small farmers and workers to seek aid. People out of work and without means in other sections of the country were forced to depend upon charity, but when it was being reported that the whole South was facing starvation and on the brink of ruin it was time to call a halt to such a distortion of truth. Such untrue publicity was harmful not only to the South, but to the country at large, for it intensified the feeling of fear and business uncertainty. A calmer view of the situation and accurate presentation of facts are now taking the place of suppositions based upon hysteria.

From Arkansas, the state that suffered most from the sensational dispatches in Northern and Eastern papers, there is being received reassuring news that the plight of the affected areas was not so bad as the headlines made out. "Distorted reports of conditions in Arkansas," states a special dispatch given prominence in the New York Sun last week, "are deplored by the people of Arkansas." Such reports are grossly exaggerated, according to a survey made by citizens interested in presenting the true picture and who resent the stories that have been published. Substantial citizens assert that now that the spring season is making it necessary for farm laborers to go to work, everyone who is asking for food relief should be closely questioned and the feeding of plantation tenants should be stopped, as there will be plenty of work for all. The problem is to separate the loafers, the professional idlers and panhandlers from those actually deserving of aid, whether in the farming districts or the cities.

The Tulsa, Okla., World reminds its readers that Arkansas is not a helpless state; and Northwest Arkansas, adjoining the Tulsa territory, is known everywhere as a region of resources and enterprise, and not even a majority of the counties of the state have suffered to any great extent from the drought.

A curious after-effect of the charity so freely dispensed in some rural sections is that some impoverished families and the naturally lazy, irresponsible type, finding it easy to get food and preferring to seek help rather than work, are making no effort or provision for self-support. They have not even plowed their gardens for the planting of vegetables, in a climate that favors early spring farming. It is a clear illustration of the demoralizing effect of wholesale charity or the dole upon certain classes. The responsible element in every community should take in hand immediately such a situation. There is work to be done, for it is planting time in Arkansas and in other states of the South.

A Serious National Problem

SOMEONE has said that a nation's civilization may be gauged by its transportation facilities. In this country, through the development of fast railway service, the airplane, and motor vehicles running over a marvelous system of highways, we are in closer contact with all parts of the nation than ever before.

It can hardly be said, however, that our civilized progress will be what it should be if we are to continue in our apparent marked disregard of human life. Older nations, and in fact older sections of our own country have learned that of first importance in every community is the safety of its citizens. It must be apparent to every thoughtful person how indifferent, or at least ineffective, we are when the mounting death toll from automobile accidents is considered. We make and we break laws and the offenders get off. We build better and wider roads, straighten curves and use every known safety device, but the dreadful loss of life continues.

Last year more than 32,000 persons were killed in automobile accidents and more than 900,000 were injured, an appalling record. Nearly 84 per cent of the deaths and 67 per cent of the injuries were the result of violations of law. Approximately 2,000,000 new drivers each year are enrolled, but in only 13 states and the District of Columbia are they examined and given licenses after a driving test. In the last 15 years the toll of automobile accidents has been 283,000 lives. It is charged that drunken and reckless driving, together with indifferent enforcement of law, are in large part responsible. The demand is becoming insistent for more rigorous punishment for violators. Prompt and rigorous punishment is still the best known preventive either for intentional crime or for criminal negligence.

Protects Taxpayer and Investor

TAXPAYERS and investors throughout the country will observe with interest the operation of a new law in North Carolina creating a state commission to regulate all bond financing of counties, cities, towns, villages and other governmental units. Under virtually dictatorial powers, the commission will exercise supreme authority in such fiscal operations, even to regulating the collection of taxes for bond redemption.

As the first step toward a bond issue, a county, town, district or other local government must ask approval by the commission, even before presenting the proposition to the electorate. For its part, the commission is to consider: Necessity for the proposed project; whether sinking funds for existing debts have been properly maintained; the existing tax rates and the increase which may be involved; the percentage of tax collections; details of budgetary control; probable earnings of the improvement, in a revenue-pro-

ducing enterprise, and the adequacy of the proposed issue for the stated purpose.

Rights of local governments are protected by provision to permit them to object to a bond award by the commission and to readvertise for bids. No such securities shall be sold below par and accrued interest, and the commission's approval of the issue must be attached to the bonds. Approval by the commission, however, does not carry guaranty of the legality of the securities. In general, redemption in 30 years is specified, though 50 years is made permissible under some conditions.

Academic discussion of the question of "home rule" is obviated through the following statement, inserted in this County Financing Act:

"The General Assembly hereby declares that an emergency exists by reason of the present extraordinary financial condition of the counties of this state, and hereby gives its special approval to the levying of taxes to the fullest extent permitted by the Constitution for the purpose of paying bonds and notes issued hereunder to fund or refund or renew indebtedness now outstanding or incurred before July 1, 1931, and hereby declares that the payment of such bonds and notes creates a special purpose."

The present "extraordinary condition" of many counties is not unique to North Carolina. North Carolina, however, is a pioneer in recognition of the situation and in taking practical action to remedy it.

American Industrial Investment

CONFIDENCE of the American people in American industry is further evidenced by a survey which shows that in the portfolios of 80 leading fixed trusts are 117 industrial securities, out of 346 in all. The industrials are of major manufacturing companies, as distinguished from public utilities, railroads, oil and mining, insurance companies and banking institutions. This preference for industrial stocks, says the American Trustee Share Corporation, testifies to "the general prominence of industrial stocks among investments."

As shown by various corporation statements, the number of individual stockholders in great industrial companies of all kinds is huge, and ever-growing. Small investors buy industrial stocks outright, and also, the survey shows, in large quantities indirectly through so-called fixed trusts. More indirectly, the small investor is involved through his interest in life insurance companies and other great holders of securities. The American people are the real owners of the industries and the railroads, the public utilities and other enterprises.

And, having thus chosen our course, let us renew our trust in God and go forward without fear and with manly hearts.—
Abraham Lincoln.

Railroads — The Essential Means of Transportation

By

L. F. LOREE

Chairman Executive Committee,
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New York

MR. LOREE is exceptionally well qualified by training and long experience to discuss the intricate problems of the railroads. The whole subject of their present distress and future development is of great importance to the people of the entire country. From his broad knowledge, both in financing and in actual railroad operation, Mr. Loree is able to throw much light on railroad problems and in this article he deals with phases of railroad history and operation from "land grant" days to the present in a most interesting way.

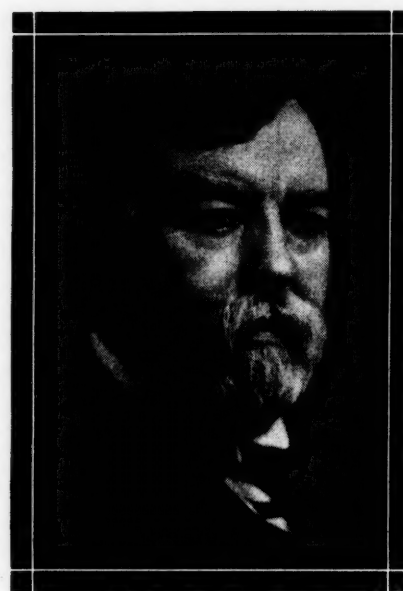


Photo by Blank-Stoller, Inc.

THE business in which the railroads are engaged is the production and sale of transportation, the function of which is to overcome the handicap created by physical geography.

When the steam railroads were first built, they were operated as a business as truly private as was that of the corner grocer. Business was then as now a relation between seller and buyer. In this relation always the buyer either actually is or represents himself to be dissatisfied. His attitude was clearly described by Solomon nearly 3000 years ago: "It is naught, it is naught, saith the buyer, But when he hath gone his way then he boasteth."

The never ending and incessant contest between seller and buyer becomes highly controversial in times of commercial depression, whether following panics, crises and depressions of wide-

spread character or following floods, droughts, crop failures or other acute changes in more restricted areas.

Such a period following close upon the panic of 1873 was the cause of much "Granger" legislation, beginning as early as 1874, being largely promoted to serve the supposed interests of the farmers then organized in the mid-west in "Granges." Prices steadily declined from the panic of 1873 to the defeat of the proposition freely to coin silver into dollars at the ratio to gold of 16 to 1, by weight, in 1896.

The long controversy over the "rights" of the Federal and State governments which had held the stage to 1865 was ended by the defeat of the Confederacy in the war between the States. The issues growing out of the war were practically disposed of when specie payments were resumed in 1879; the tariff issue be-

came unavailable after the defeat of Benjamin Harrison in 1892. Thereafter, the politicians were without an issue upon which to go to the people, and without issues they perish.

There are said to be three things against which the wit of man struggles in vain: Catchwords, stupidity and bureaucracy. The quarrel between sellers and buyers of transportation provoked by the Granges, but speedily set at rest by the heavy increase in wheat exports from 1875 to 1900, was revived by Roosevelt and La Follette in 1905 and the politicians adopted it with avidity. The sellers were few, the buyers a multitude, all promising votes. If the politicians could induce the buyers to follow their leadership it would insure their continuance in offices of power and profit. It further possessed for them that treasure of great price, an assorted list of catchwords, with which they could produce a smoke-screen behind which they could successfully maneuver. The

more significant of these catchwords were the following:

LAND GRANTS. One of the common practices, still followed, in building up a community is to offer special inducements to locate therein to manufacturing plants and other desirable business organizations. The most common forms are reductions of or entire relief from taxation for a term of years, gifts of lands for building sites, gifts of moneys, and purchase locally of a substantial amount of junior securities, and these singly or in combination.

Communities followed these practices generally in inducing the location of railways through or to them and the evidences still survive in contracts governing the location of terminals, shops, etc.

The inducements held out by the State and Federal governments usually took the form of grants of land. Such railways as benefited received from the United States and individual states about 155,500,000 acres of land (of which they have only so far patented 132,000,000) and which, at the time they received it, was being sold by the grantors at from 41 cents to \$1.67 an acre. The average selling price during the 20 years' period covered by the grants was 94 cents per acre. This would give a value to the grants when made of perhaps \$125,000,000. The railways receiving these grants, since known as the land grant railways, were obligated to handle Government freight and passengers at one-half the commercial rates and mail at four-fifths of the going rate paid by the government under contracts. The Bureau of Railway Economics estimates an annual saving to the Government of \$5,000,000. So that, every 25 years the Government gets back the full value the land had when the donation was made. This will continue indefinitely. The Government greatly profited directly by the railroad construction which made land salable that otherwise would not have been saleable at all.

Much of the land given by the Federal Government was sandy waste, barren cactus plains or rugged mountain areas. All that portion west of the Mississippi River which Thomas Jefferson secured in the Louisiana Purchase in 1803 cost but four cents per acre. The lands east of the Mississippi cost even less—an occasional uniform for the Indian chiefs, a few yards of cloth, an axe or two, and a few handfuls of glass beads were the customary considerations for vast acreages. Well might the Six Nations complain "that they were not fairly dealt with, that the white man was more cunning, that he got their names on paper very fast, and that they often did not know what for." The last of the land grants was made in 1871. The railway

land grant was certainly one of the best bargains the Government ever made. It has proved very expensive to the railways and the end is not in sight. Costly as these land grants have been to the railways directly, the indirect cost attaching to the term "land grant railways" which was foisted upon them has been much greater. There is much in the Government's treatment of the railways that recalls its treatment of the Indian tribes.

SPECIALTIES. The physical structure of the railroads is built up of a multitude of parts. Many of the assembled structures, as the track, the freight cars, the locomotives, may to the casual eye present no differences, but to the expert these differences may be outstanding. In 1898 I secured from the Patent Office copies of all the patents that had been issued for rail joints. There were more than 3,000 of them.

Upon the recommendation of the Interstate Commerce Commission, the Congress authorized in 1907 the Commission to "supervise and conduct experimental tests of safety devices." The Commission appointed "the block signal and train control board," and directed it to examine "all devices intended to promote the safety of railway travel, whether they pertain strictly to block signals and automatic train stops or not." The Board made five annual reports, 1908-1912. They examined 1146 devices and systems brought to their attention, 1047 covered by complete plans. The devices applied generally to the block system, automatic train stops, track structure (rails, ties and roadbed), headlights, car couplings, automatic connectors and general conditions affecting safety.

The charge was pressed by witnesses of a closed mind on the part of railroad officers against the use of new or improved appliances. It was urged by every inventor whose invention was not immediately accepted and applied and listened to by nearly everyone who considered that his intuitions would afford a safer guide than the experience of those long engaged in railroading.

The Board found but few devices of enough merit to warrant even an inquiry; for the most part they were in the hands of proprietors who had neither the knowledge nor energy to install their apparatus and almost none were ready for a test. Seldom was a net cast with so small a capture.

These devices came in the railway business to be called "specialties," and taking on a character of reproach were for a long time the basis of fierce criticism. With the introduction of the automobile, with its "accessories," the mys-

tery attaching to this situation disappeared and one seldom now encounters the use of the word "specialties."

Some of these devices are taken on by the railroads under pressure of public commissions or legislative action. Manufacturers of materials and appliances failing in their efforts to sell by solicitation have secured passage of laws making compulsory the use of their goods. To a surprising extent laws provide markets for devices that could not be sold upon their merits.

RAILWAYS ENGAGED IN BUSINESS OTHER THAN TRANSPORTATION. Aside from the creation of the transportation facility, there were few agencies more active and effective in development during the last century than were the railways. From their beginning, the railways joined energetically with other interests in developing the regions they served. Sometimes with their own capital they promoted mines, lumbering operations, manufacturing plants; sometimes they aided with contributions such promotions by others.

In time their interests became matters for envy by sellers who determined to drive these competitors from the markets. Rulings were first secured requiring the accounts of such enterprises to be separately kept from those of the interested carriers and later the passage of the "Commodities Clause" of the Interstate Commerce Commission Act, effective May 1, 1908, by which a railroad was prohibited from shipping over its own rails any commodity in which it had an interest; that is, nearly all the railroads were, for there was the glaring and grotesque exception that railroads owning timber lands might continue to lumber, saw and transport the commodity they owned. The act failed to reverse the rule of conduct that permitted all extractive, producing and manufacturing interests to own railroads and ship over them the commodities in which they had an interest. There is need for a clarification of the law. Many steam roads are merely plant facilities masquerading as common carriers and should be confined to their proper function.

The laws of the country are still relatively free of such glaring discrimination between the rights of citizens. Character is formed upon ethical discrimination, a sense of obligation and a disciplined will power. This legislation may be searched in vain for any recognition of these qualities. Whatever may be said for the idea sought to be given force, the manner in which it was done and still continues after 23 years, is a reproach to a free country. It was acts such as this that led to the Puritan

Revolution which drove the Stuarts from the Throne, that won freedom of the subject from arbitrary tyranny and established the whole body of practices summed up in the "rule of law" under which it is our proud boast that we live, shutting our eyes to such glaring substitutions of the "rule of men."

PASSES. From the beginning the railroads issued free transportation evidenced in a form known as a "pass."

It was in many cases a substitution for money payments, in others to placate opposition or insure friendly relations, in others a mere expression of neighborliness, akin to the hitch-hiking now so generally to be observed in motor car movement on the highways.

When president of the Baltimore and Ohio Railroad Company, I established a pass bureau for issuing this type of transportation and had an audit made of the use of passes in the same manner as the audit made of the use of tickets. These records were burned up in the "Baltimore Fire," but the impression made and retained is that the extent of the practice was grossly exaggerated. The trains used were scheduled trains and the service rendered the pass user scarcely cost the company a penny.

Some of the pass-holders never used them, some hunting for customers and so creating traffic used them frequently; the one most vigorous in this respect I recall journeyed 14,000 miles in one year. Passes were sought on all accounts but were, for the most part, issued to shippers and politicians. Abuses grew. The aldermen at Baltimore were so embarrassed by solicitation for their loan that in self-defense they asked to have their photograph pasted on the passes to insure against their use by other than the designated holders.

On January 1, 1903, by agreement among the eastern lines' presidents, the issue of annual passes to soliciting agents of western roads was abolished. Later all eastern roads ceased to issue passes to other than railroad employees. The Pennsylvania Railroad has generally been held responsible for the latter, its notice having been made public on December 13, 1905, but there is every reason to believe that the change was the result of an agreement. The fact that the following day the New York Central, the Philadelphia and Reading and the Central Railroad Company of New Jersey issued similar notices would seem to bear this out. The railroads never realized adequately the value of the pass as a protection against political action. It was at the time the quite general feeling that the Hepburn Bill, which became law on June 29, 1906,

was delayed for six months in the hope that the issue of passes would be resumed. As William Peter Hamilton said, "it was corrupting or not, according as you look at it, but the ban on passes was, upon the whole, the most expensive enforcement of a somewhat pharisaical virtue this country has ever seen."

EMINENT DOMAIN. Eminent domain can never be exercised by any corporation except by express statutory grant either to the particular corporation or to the class of corporations to which it belongs.

No claim was ever made by the railroads that this privilege is independent of statutory law. Its exercise was recognized as necessary from the very first and for the grant of power for its use no recompense is to be found nominated in the bond.

As a matter of fact, it has had wide application in industrial life. It has been used to serve the interest of various enterprises—milling, mining, irrigation—where the ownership was in private hands. Conversely, rate regulation has been repeatedly enforced against enterprises which do not exercise the power of eminent domain—grain elevators, private wharves, hackney carriages, chimney sweeping, hauling by cartmen, wagoners, carmen and draymen, and even the commissions charged by auctioneers.

REBATES, DISCOUNTS AND EXTENDED CREDITS. In the conduct of business, special consideration in the form of a discount in price is usually given to buyers who take large deliveries as against those who take small deliveries. Credit is used in two ways to a desirable customer: for prompt payment a discount may be allowed or a deferred payment may be extended.

In retail transactions, the "higgling" of the market occupies much time and gives ample play to shrewdness. As early as 1660 George Fox, then the leader of the Quakers, endeavored to get all that membership to adopt a "fixed price" for retail transactions, whether in the shop or market, on the score of personal honesty, "So say, so do" being the motto he set up. But it was not until the 1880's that the "fixed price" began to prevail in the retail trade, due largely to the practice of A. T. Stewart. In times of stress, as today on all sides, we see how easily it yields to pressure.

All these commercial practices the railroads followed, though the "fixed price" for retail transactions prevailed

almost from the start. Like other industries, they soon developed technical terms, and substituted in the larger transactions the word "rebate" for the expression "discount," and this, ceasing to be generally understood, came to take on the appearance of evil. The concessions resulting from "higgling" of the market were called "rate cutting"; the reductions from a higher to a lower classification went unidentified by any special cognomen.

The Congress, in its Act to Regulate Commerce, effective on April 5, 1887, and commonly known as the Interstate Commerce Law, sought to distinguish the business of the railroads from that of other corporations and individuals, and especially to abolish the discounts known as "rebates." Notwithstanding the ample power to deal with the matter given the Interstate Commerce Commission, which was created to administer the law, so firmly was the idea of discounts as essential to trade fixed in the public mind that the Commission found itself powerless to deal with rebates. Mr. A. J. Cassatt returned to active service as president of the Pennsylvania Railroad in 1899 and at once moved to give substance to a plan which came to be known as the "community of interests." When this had been matured, he announced that "rebates" would no longer be accorded to any shipper, no matter how important, and a practice which during the twelve years of its life the Interstate Commerce Commission had not broken down was brought to an end by the determined action of one man. Columbus having shown how easy it is to stand an egg on end had many imitators. Mr. Cassatt's success was promptly followed by the Elkins Law, effective on February 19, 1903, and much subsequent legislation. Discounting for prompt payment seems never to have had much vogue, and extensions of credit were discontinued by an order, No. 25, issued during the War, (July 1, 1918), by the Director General of Railroads and supplemented by an order of the Interstate Commerce Commission June 4, 1920, fixing the limit for the collection of transportation charges at no more than 96 hours. On January 20, 1931, the Interstate Commerce Commission issued an order, effective on March 10, 1931, extending the term of credit to 30 days for charges where disputes arise as to the rate or service.

WATERED STOCK. Corporations are of quite modern growth, the natural evolution from the individual business, and the partnership. Their characteristics were perpetual succession, limited individual liability, control by the majority in interest, the capacity to sue and

be sued in the corporate name. They did away with the personal relation, the hazards of dissolution, the necessity for unanimous consent, the ability of one to speak for all and by his separate action to control and imperil the joint assets.

Their capital is composed as a rule of funds supplied by the owners for which shares of stock, now of many classes, are issued and of borrowed funds for which bonds, now of many classes, are issued. It proved in the end a calamity that stocks should have been given a stated (or par) value on the face of the certificates. Their value, of course, fluctuates from day to day and the prices at which they are bought and sold has no relation to the amounts printed on the certificates.

The stock certificates are in point of fact, the evidences, of definite fractions, undivided interests, in the whole property. If the issue is (say) 1,000,000 shares the owner of 100 shares has an undivided 1/10,000 interest in the enterprise.

This aspect has always been reflected in deeds for real estate where there are several owners. The New York State Bar Association in 1892 proposed the removal of the dollar mark from stock shares. In 1909 a special committee of the Association drafted a bill to secure this end which, after passing both houses, was vetoed by the Governor. The Railroad Securities Commission recommended it in its report to Congress in December, 1911, and finally Mr. Francis Lynde Stetson secured its adoption in the State of New York on April 5, 1912.

THE BASIS OF THE FREIGHT RATE. When the public authorities had begun to take control of rates, the railroads were obliged to find means to prevent the private property of the shareholders from being drained from them. Their lawyers felt secure in the protection of the Constitution of the United States which provides that "property shall not be taken without due process of law nor for public use without just compensation," and so sought when controversy arose, to establish values for the railroads that could not be reduced.

The leading case was that of *Smythe vs. Ames*, where the Court said: "In order to ascertain that value, the original cost of construction; the amount expended in permanent improvements, the amount and market value of its bonds and stocks; the present as compared with the original cost of construction; the probable earning capacity under particular rates prescribed by statute and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may

be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of that which it employs for the public convenience." This is the oft-quoted decision of the court and presents the minimum that cannot be encroached upon by the State under the prohibitions of the Constitution.

But the Court did not stop there. It went on to say: "On the other hand, what the public is entitled to demand is that no more shall be exacted from it for the use of a public highway than the services rendered by it are reasonably worth." Almost never do we see this part of the Court's findings alluded to. Yet here we have the limitations beyond which, on either side, the rates must not wander. On the one hand, the public authorities may not force down the rates to a level that will not permit a fair return to be earned upon the value of the railroad. On the other hand, railroad management may not force up the rates to a level above the reasonable worth of the service rendered.

So there arose two methods of looking at rate structures—the politicians searching for a "cost of service" at the level of confiscation; the railroads seeking for a "value of service" out of which they hoped to reap a profit. Over this narrow field, delimited on the one hand by bankruptcy, on the other by prosperity, exciting jealousy, arousing rivalry, inviting attack, the battle still fiercely rages.

LONG AND SHORT HAUL. The Interstate Commerce Law prohibited a greater charge for an intermediate haul of freight than for a longer haul over the same line in the same direction, provided that the movements to the intermediate point and to the more distant point were "under substantially similar circumstances and conditions." The Interstate Commerce Commission held, on June 15, 1887, that the railroads and not the Commission were the judges in the first instance of whether the greater intermediate charge was permissible. The Commission reversed this interpretation in 1892. On April 8, 1901, the Supreme Court rejected the Commission's second thought and approved the interpretation declared in 1887.

On June 18, 1910, Congress revised Section 4, striking out the words "under substantially similar circumstances and conditions," and enacted a complete prohibition of higher intermediate charges, subject, however, to dispensing power on the part of the Commission. Probably nothing in the Interstate Commerce Law has had such far-reaching effect or been so provocative of complaint and litigation

as this "long-and-short-haul" situation.

The law imposed upon the carriers an enormous task of rate revision and upon industry a difficult series of readjustments and both these processes have been going on for twenty years. In the exercise of its dispensing power, the Commission was at first inclined to considerable liberality. Later, it became inclined to more severity and towards curtailment of the number of exceptions to the general rule, while, still more recently, there has been an apparent restoration of the former liberal rule, no doubt caused by vigorous protest of sellers and buyers in most parts of the country. Recently, in mid-Western territory, an excessively complicated rule of rate construction has been prescribed, the action of the majority of the Commission being over a very strong dissent. No longer ago than December 2, 1930, rates were authorized on export grain as low as sixty-five per cent of the rates to intermediate points on the same line.

The fact is that this attempt to substitute a crude cost-of-service method of rate making for the value-of-the-service method involves all the difficulties incident to making water run up-hill. But as a catchword it has been invaluable to the politicians.

POOLING. Over-stimulation of railroad building, largely a consequence of the land-grant policy, naturally led to excessive competition for traffic during times when the aggregate demand for transportation was insufficient to afford a fair return upon railway investments. Efforts of traffic officers to divert traffic from rival routes by means of secret or open reductions in rates for passengers or freight were frequently followed by reprisals resulting in rate-wars conducted with more enthusiasm than discretion. Very often the ensuing rate-levels became ruinously and ridiculously low. During one of these early contests of endurance an adroit railway manager obtained considerable personal profit and caused serious chagrin and loss to a competitor by purchasing and shipping cattle over the rival line. To avoid such losses the device of pooling the earnings or traffic of competing routes became common. Arrangements, called "money-pools," provided for dividing in agreed proportions the revenue, or portions of it, derived from competitive traffic while, in another form, "tonnage pools" provided for the actual apportionment of the traffic. Relatively unimportant arrangements of this sort were made in New England, where the practice seems to have originated, but the earliest important pool was formed in 1870 and

applied to both passenger and freight traffic between Chicago and Omaha.

Agreements for the division of competitive traffic or the earnings therefrom were a conspicuous and characteristic feature of American railway practice at the time of the passage of the Interstate Commerce law. The wisdom of the prohibition contained in that Act was disputed at the time of its passage and numerous measures to restore the privilege were from time to time introduced and urged in Congress. Such bills passed one of the two houses on several occasions but there was no favorable legislation until the Transportation Act of 1920 authorized pooling arrangements, when approved in advance by the Interstate Commerce Commission, and under its strict supervision. During the period that pooling was prohibited there were numerous efforts to achieve stability in rates through associations but effective arrangements of that character were rendered impossible by the decisions of the Supreme Court in the *Trans-Missouri case*, 166 U. S., 290 and the *Joint Traffic Association case*, 171 U. S., 505; the former decided on March 22, 1897, and the latter decided on October 24, 1898. Since 1920, a few pooling arrangements on passenger traffic have been effected, enabling reductions in superfluous competitive train service but there seems little incentive under the present law to resort to the pooling of freight traffic or earnings.

AFFECTED WITH A PUBLIC INTEREST. An erroneous or misapplied quotation from an essay more than two hundred years old apparently has fastened permanently upon the railroads of the United States a system of legislative rate control based upon the notion that railroad property is intrinsically different from most other kinds of property.

About 1670, Sir Matthew Hale, Lord Chief Justice of England, writing with regard to the rights of individuals to use the facilities of British ports, said that when a public wharf is set up where all vessels must load and unload, then:

"* * * the wharf and crane and other conveniences are affected with a public interest, and they cease to be *juris privati* only."

In *Munn v. Illinois* (94 U. S. 113), decided in 1876 by the United States Supreme Court, the foregoing was quoted (p. 126) as, when private property is—

"* * * affected with a public interest it ceases to be *juris privati* only."

Thus, by broadening the ancient saying of Sir Matthew Hale, it appeared as the promulgation of a principle justifying the regulation of—

"* * * ferries, common carriers,

hackmen, bakers, millers, wharfingers, innkeepers, etc., and in so doing to fix a maximum of charge to be made for services rendered, accommodations furnished, and articles sold."—94 U. S. 113-125.

Munn v. Illinois did not apply to railroads but the doctrine of that case was so applied in two decisions rendered on the same date—*Chicago, Burlington and Quincy Railroad v. Iowa*, 94 U. S. 155; *Peik v. Chicago and North Western Railway Company*, 94 U. S. 164.

Well did Mr. Justice Field, who, with Judge Strong, dissented in all three cases, say:

"If this be sound law, if there be no protection, either in the principles upon which our republican government is founded, or in the prohibitions of the Constitution against such invasion of private rights, all property and all business in the State are held at the mercy of a majority of its legislature. The public has no greater interest in the use of buildings for the storage of grain than it has in the use of buildings for the residences of families, * * * The public is interested in the manufacture of cotton, woolen, and silken fabrics, in the construction of machinery, in the printing and publication of books and periodicals, and in the making of utensils of every variety, useful and ornamental; indeed, there is hardly an enterprise or business engaging the attention and labor of any considerable portion of the community, in which the public has not an interest in the sense in which that term is used by the court in its opinion; * * *"—94 U. S. 113-140-1.

It is true that the Court found it inevitably necessary to limit the broad doctrine asserted in *Munn v. Illinois* but the truth is that this notion of private property charged with a public interest, as distinguished from other private property, is merely a form of resonant words without meaning. It is logically impossible to discover a principle which warrants public regulation of the rates charged for railway transportation of automobiles without extending either to the price of the automobile or to the rates for moving them when carried over water routes. It is similarly impossible to explain why rates for moving bales of costly and luxurious silks by railroad should be controlled by the legislature while prices of food and clothing in metropolitan markets are uncontrolled.

The fact must not be overlooked that rate regulation has, at different times, been assumed to rest (1) upon the exercise of the power of eminent domain, and (2) enjoyment of a monopoly. Both these bases of regulation have been denied by the Supreme Court. As to the first, *Munn v. Illinois*, the leading case was concerned with a warehouse, which possessed neither a monopoly nor the power of eminent domain. And, as to

the second, in these days of tax-supported waterways, vastly improved public highways, automotive buses and trucks, pipe lines and air navigation, it is even more absurd than in the past to conceive of railroads as monopolies.

The Commission on Transportation reported to the American Economic Association in 1887: "Many of the charges, even where they relate to serious evils, and are undoubtedly true, involve, of course, no moral turpitude on the part of the railroad authorities, as many people seem to think. Railroad officials are much like other men and act much as other men act under like circumstances. * * * The evils of our present railroad management are, in other words, to a large extent, the result of carelessness, shortsightedness, and selfishness of the American people, and particularly of its representatives, and they will not disappear until the opposite of these qualities are exercised by our legislators."

During the long fifty years of controversy, many of these catchwords have lost their hypnotic effect. Potency would now seem to be limited to "Eminent Domain"; "Basis of the Freight Rate"; "The Long and Short Haul"; and "Affected with a Public Interest." Let us hope they too will pass. We should not be like the Matabeles of whom Burnham writing of "Scouting on Two Continents" says: "Here were people given more liberty than they had ever known before; the slaves all freed, labor paid in coin, lands held in safety, and taxes lighter by far than those levied on any white man in the Empire. But let one cabalistic word be whispered in the ear of a servant by an emissary of the M'Limo (the mouthpiece of God), and he became as a bit of grass swayed by an invisible wind. All the white man's kindness and the benefits of good government were swept from his mind."

In the last analysis, the nation's prosperity, growth and very existence depend upon transportation. If we omit the business handled through the Panama Canal between the two oceans and upon those inland seas, the Great Lakes, then we find:

COMMERCIAL FREIGHT TRAFFIC IN THE U. S. IN 1928

	Ton-Miles	Per Cent
Steam railroads	477,000,000,000	89.5
Pipe lines	31,000,000,000	5.8
Inland waterways (rivers and canals) ..	12,000,000,000	2.3
Motor trucks (interurban movement)	10,000,000,000	1.9
Electric railways and airplanes	3,000,000,000	0.5
Total	533,000,000,000	100.0

The steam railroads furnish the best and cheapest transportation service available anywhere in the world. Their present state is, in many respects, deplorable. We cannot contemplate their destruction without anticipating ruin to

ourselves; nor can we promote our own interests more directly than by assuring their prosperity. They were the means with which we opened up and developed the country; they remain the means upon which we must depend not alone for the future success or failure of this country as an economic entity but for our very existence in the long future. The price we shall have to pay, if we would have progress, is individual and national righteousness.

\$1,000,000 Texas Pipe Line

Longview, Tex.—Plans for the construction of a \$1,000,000 pipe line to the East Texas oil field are being considered by the Texas Company, New York, which is making a survey of the proposed route. The line would extend from the Lathrop area north of Longview to Nacogdoches, where it would connect with the line to the Port Neches and Port Arthur refineries, it is reported, making about 75 miles of trunk line, in addition to numerous gathering lines from the Bateman and Deep Rock areas which would be required.

\$1,000,000 Salt Mining Project

Winnfield, La.—A \$1,000,000 salt mining project is under way four miles north of here by the Carey Salt Co., Hutchinson, Kans. A shaft, 14 feet in diameter, concrete lined throughout, providing for two hoisting compartments, is being drilled by the Dravo Contracting Co., Pittsburgh, Pa., and salt was entered at a depth of 440 feet. The shaft will probably be continued to about 700 feet. Construction of the outside plant, including an eight-story concrete building, was held up until the shaft entered the salt. Now that this has been accomplished, it is expected that contracts for buildings and machinery will be let in the near future. The plant will be electrically operated throughout, using power from the Sterlington station of the Louisiana Power & Light Co. It is said, the salt dome is about 1800 feet thick, the crystal salt analyzing 99.7 per cent pure. Allen & Garcia Co., Chicago, Ill., are engineers.

Boiler House Contract

Bristol, Va.—The Columbian Paper Co., Buena Vista, Va., has awarded contract to the Fiske-Carter Construction Co., Greenville, S. C., to erect a boiler house here, for which machinery contracts were announced a few weeks ago. The W. E. Biggs Engineering Co., Knoxville, Tenn., is handling engineering details. An additional paper plant unit will probably be erected later.

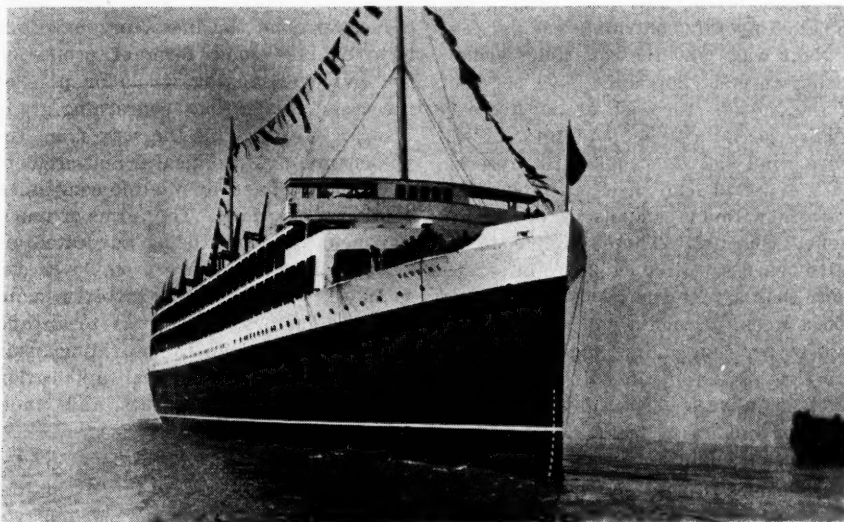
Passenger Liner for Florida-Cuba Service

The new passenger liner Florida of the Peninsular & Occidental Steamship Co., was launched March 7 at the plant of the Newport News Shipbuilding & Dry Dock Co., Newport News, Va. Miss Leila Delano, daughter of Lyman Delano, executive vice-president of the Atlantic Coast Line Railroad Co., and a member of the board of directors of the Peninsular & Occidental Steamship Co., acted as sponsor.

The Florida was built at a cost exceeding \$2,500,000 and is expected to

radio equipment, are a few of many safety devices.

The ship is especially designed for the service in which it will be engaged. All staterooms will be outside, so arranged as to secure maximum natural ventilation. In addition, the ship will be mechanically ventilated, and each room will be equipped with an electric fan and running water. There will be numerous deluxe suites, also two wide promenade decks, spacious dining room, smoking room, veranda and dance floor. The ship



S.S. Florida Recently Launched at Newport News

begin service about June 1, operating between Key West, Havana and Port Tampa. Officers of the operating company report a steady growth in volume of passenger travel and movement of freight between Cuba, the West Indies, Latin American countries and the United States via the ports of Key West and Port Tampa. The new steamship is 387½ feet long, 56½ feet wide, with a depth of 28½ feet. Its draft, loaded, will be 20 feet, and its displacement 5900 tons. Twin screw geared turbines, developing 9500 shaft horsepower, will drive the Florida at a speed of 20 knots. Such features as double bottom, full length, watertight bulkhead doors mechanically operated, latest improved fire protection system, range finders and

will be licensed to carry approximately 800 passengers. First class sleeping accommodations will be provided for 612, and second class accommodations for 130. Two freight elevators are provided. Space will be available for handling a large number of tourists' automobiles, as well as general cargo, mail and express.

\$700,000 Sewer Extension

Springfield, Mo.—City Council has sold a \$700,000 bond issue for sewer extensions to Stix & Co., St. Louis, at par and premium of \$16,657, the sale being subject to approval by the voters at an election March 26.

Employee and Unemployment Insurance

By
HOWARD L. CLARK

UNEMPLOYMENT insurance is to be tried under a new plan adopted in Rochester by 14 concerns with an aggregate payroll of 25,000 persons. It is believed to be the first plan of its kind in the United States and, according to the New York Herald Tribune, calls for a reserve fund set up by the industries over a period of five years. The cost is to be borne by the companies, except in an emergency, when those participating will be called upon to contribute one per cent of their wage and the companies contributing an equal amount. Two per cent of the payrolls for each of the five successive years will be paid into the reserve fund and this substantial reserve, it is expected, can meet unemployment distress without compulsory or government insurance. Those eligible to receive benefits will be employees in service more than a year and receiving less than \$50 a week. Benefits will equal in general 60 per cent of the wage received at the time of the layoff, with a maximum of \$22.50 a week. The subject of unemployment insurance is one which is causing much thought and study at this time. As mentioned in the foregoing, there is an endeavor to develop voluntary insurance plans on a practical basis to make unnecessary compulsory or government insurance for unemployment.

The industrial insurance and pension plan adopted a few weeks ago by the Standard Oil Company of New York for its 45,000 employees is the largest of its kind ever undertaken by a private corporation. The company will pay 75 per cent of the premium at a cost of about \$10,000,000 a year, and will retire men employees at 65 and women employees at 55 on part pay. Retirement benefits will be irrevocable.

Last month the MANUFACTURERS RECORD published an article on the proposals for old-age retirement benefits under the heading "Building a Reserve for Old Age," by Leroy A. Lincoln, vice-president and general counsel of the Metropolitan Life Insurance Company. In analyzing the question, Mr. Lincoln cited reasons why state insurance for that purpose

was impracticable. Since the inception, about ten years ago, of the group life insurance plan, the idea of employee insurance has rapidly spread and many industries and business organizations have adopted some form of protection for employees, paying whole or part of the cost. Suggestions concerning group insurance extend all the way from the present plan of life, health and accident insurance, carried by old-line companies, to old-age pensions. The forms of unemployment insurance being advocated are of vital interest to every employer and employee. The subject involves many complex factors not only as to an adequate financial plan for providing insurance, but in its practical application. Who will receive benefits and under what conditions?

In an effort to get a cross-section view of the question, the MANUFACTURERS RECORD inquired of a number of industrial leaders in the South as to the extent they had found it advisable to adopt group insurance, what plan they followed and the advantages obtained. This investigation developed the fact that leading employers in the South had given considerable thought and study to group insurance and to plans for protecting the aged and infirm who have served employers faithfully over a term of years. Without exception the replies were favorable to some form of group life insurance for employees. Equally significant were the misgivings of some executives of outstanding concerns in the South who discussed old-age and unemployment insurance as to the practicability of such insurance, and decided opposition was expressed toward state and federal legislation on the subject.

A few of the points raised which should receive careful consideration are:

1—Insurance or pensions must be part

of the cost of doing business and necessarily should be passed on to the public.

2—No industry can be definitely sure that it will continue to be in business for all time. Some concerns, now successful and prosperous, will eventually fail. This at once raises a problem which would have to be overcome. The objection is raised that a man could serve his employer for a long period of years and overnight a pension right might be dissipated through the failure of the business. This would seem to make it desirable that all such insurance funds shall be established as trust funds and as such held sacred.

3—A part of the expense of the insurance or pension should be borne by the employee for the specific reason that he will then give due and proper consideration to this investment before he permits it to lapse.

4—What provision would be made for the employee participating in a pension plan should he be dismissed for cause? Would his pro-rata part of the reserve fund put up by the company be turned over to the dismissed employee or should it remain for the benefit of those still employed?

5—Group insurance covering life, health and accident has proven beneficial to employer and employee, giving the employee protection at lower cost and under conditions which perhaps he could not duplicate in any other way. The suggestion is made that some form of group insurance could be extended to old-age benefits, since there is obtainable data upon which insurance companies can base a workable plan. Group insurance has a tendency to keep down labor turnover and, while primarily benefiting employees, the employer also obtains good will and loyalty.

It is the belief of some executives that as numerous plans will no doubt be tried, finally, through a process of elimination of objectionable features, some plan may prove sufficiently practicable for industry as a whole to adopt it. At least one such plan has been launched,

as stated, by some of the larger industries in Rochester.

Unemployment insurance is so complex and involves so many unknown factors that many doubt whether any sound basis can be established upon which to operate such a social experiment. One executive of a large organization operating in the South writes:

"Personally, I am decidedly opposed to any form of old-age pension, or old-age insurance, effective under state or Federal control. I believe that the ideal arrangement would be for corporations to carry their own old-age retirement insurance, somewhat along the plan outlined by Mr. Lincoln.

"My observation has been that a number of companies who have adopted such plans have endeavored to make them too elaborate, and to put them into effect too rapidly. In this way, the initial cost brought upon the companies, and the employees, has proven burdensome, and they have fallen from their own weight.

"Our company has been giving serious consideration to both old-age retirement and unemployment insurance, and I am confident that within the course of the next year we will have some plan for protection of these two most worthy causes.

"I believe the only logical way to handle such insurance is through a company qualified to handle the great detail incident to such plans, and also to make them effective over a long period of years, which is, of course, absolutely essential."

Another manufacturer writes:

"At the present time this company has an old-age retirement plan for its employees, the total expense being borne by the company. This plan has been in effect about 16 years.

"We are now considering a revised retirement plan where a portion of the cost will be borne by the employees.

"We also have a group insurance plan covering health and accidents outside of working hours, and death. About 85 per cent of the employees participate. The larger part of the cost is borne by the employee, but the company pays a substantial part so as to enable all employees to obtain life insurance at a uniform rate."

A lumber manufacturer makes this comment:

"It was a question in our mind as to whether we should carry insurance for the benefit of our employees or whether we should give them the opportunity to go into it. This would enable many to have insurance who could perhaps not otherwise secure insurance, but in view of the fact that some of our mills have a short life and soon cut out, insurance would not be more than well under way until the mills would have depleted their timber and been forced to close down. In my judgment, for any operation that can run perpetually or has a long life, such insurance has many advantages for the employee whether it is carried by the employer or the employee. It makes but little difference as to who pays the premium, because labor can only be paid a certain percentage of the turnover, and whether it is paid in insurance premiums or however it is paid is of little importance other than the fact that

anything that will encourage employees to save some portion of their earnings that would not otherwise be saved is after all the policy worthy of most consideration.

"No doubt much of the trouble today with most of the unemployed is that their better day has passed; and, at a time when it was possible, but little thought was given to the necessity of saving. Instead numerous luxuries have been purchased—luxuries that were never before enjoyed or expected—and whether the wages were large or small, they were spent. Only recently we found it necessary to curtail to the extent of cutting off our night run. Wages had not been cut, work had been regular, living costs had been much reduced, and notwithstanding the fact that we had warned them of the necessity of saving, in less than two weeks after we had closed down, many of these laborers came back to us for assistance, claiming that they were unable to find work and their families were in need. Therefore, we have now found it necessary to rotate and give employment to these men, cutting down the time of the other men and thus increasing the problems that every manufacturer faces at this time.

"While we feel the responsibility of trying to find ways and means of taking care of the people who have served us, and it is a responsibility that we cannot very well shirk, at the same time but few of them appreciate just what we are up against or have any conception of the magnitude of the problem.

"It is our plan to make opportunity for our people by giving them the use of lands to develop and cultivate when they are not employed in the mill. They can use their time on the days they are not in the mill in this way, and we are insisting upon every man working six days in the week, as when we cannot use him in the mills, he shall spend the time in the cultivation of such crops as will afford him a living if a worse condition should prevail later on. If things should pick up later on, they will then be in a stronger position than ever before.

"We have found it necessary to cut house rent for the three and four days per week men and assist them in every way possible to reduce their cost of living."

Group life insurance is carried generally by the large industries of the South. With variations as to the plan followed, the extent of coverage and the manner of carrying the cost of this insurance, the following statement of a large steel manufacturer is illustrative:

"We carry a group insurance on all of our shop employees, for the erection employees, office employees and the management. In the shops, employees can take policies for \$1000, \$2000 or \$5000. In the office and management, they may take \$1000, \$2000, \$5000 or \$10,000. The executive or employee pays approximately 70 per cent of the premium and the company pays approximately 30 per cent. This results in a very low average premium, which is alike to all, and has enabled older employees and disabled employees to obtain good coverage where ordinarily they would not be and are not insurable.

"Our shop employees are permitted to take out health and accident insurance

for a limited amount, to which the company contributes 50 per cent of the cost."

In addition, the organization has adopted a pension plan, whereby men are compelled to retire at the age of 70, after which they receive a monthly pension equal to one per cent for each year of service based on the average earnings for the last ten years of service.

One manufacturer who pays an appreciable part of the cost of group insurance for employees states that about 80 per cent of his force are participating in this protection. While no provisions for pensions are made, aged employees are sometimes carried on the payroll at a nominal sum. This management does not favor legislation favoring old-age pensions and believes the present trend toward legislation requiring the establishment of unemployment reserve funds will establish a dangerous precedent and should be opposed because it is economically unsound.

In one organization established 20 years ago in the South, and operating one of the largest plants of its kind in the world, it was found that the cost was absolutely prohibitive to establish a formal plan of retirement insurance. Instead, the company adopted a plan to handle each case on its merits, where the employee could no longer carry the full responsibility of his job. No arbitrary age limit is set and the comment is made that: "We have some men in our organization who are more active at 70 than others at 55 or 60." Further:

"In addition to our plan of life insurance, providing for an ordinary life policy in the amount of \$500 to each employee who has been with us as much as one year, the employees may carry with the same company such accident and health insurance as they may desire in any amount additional to the \$500 carried, and health insurance, which must be paid for by the employee.

"Group insurance is also applicable to the executive force in proportionate larger amounts and at reduced rates. Only a small percentage of the cost of the insurance of the executive group is carried by the company. One form of policy available for the executive group provides for retirement in case of ill health, provided the incapacity occurs before the age of 60."

The railroads were perhaps the first large industrial group to adopt an employee pension system. One line in the South has followed a comprehensive employee insurance plan and also a retirement plan—each independent of the other—as outlined in the following:

"The insurance plan, which is voluntary, furnishes our employees with accident, sickness and life insurance at prescribed rates, all employee payments being used for benefits, the railway company assuming all operating costs including clerical hire, medical examiners, etc.

"Our pension plan provides for retire-

ment with pension of officers and employees as follows:

"Compulsory retirement at age of 70 years;

"Voluntary retirement between ages of 65 and 69, inclusive, if 25 years or more service record;

"Retirement account permanent disability at any time if 20 years or more in service;

"All funds are provided by the railway company;

"Pension payments are based on years of service, the monthly pension payment being, for each year of service, one per cent of the average monthly earnings for the ten years preceding retirement."

To safeguard this pension plan, at the close of 1925 the railway company created a pension reserve or trust fund

by making an initial appropriation from surplus of an amount which was figured to be sufficient to provide funds for total pensions of employees then on the pension roll. Since then additional appropriations have been made each year to take care of total pension liability of employees retired during the year. Three trustees of the pension reserve fund, appointed by the board of directors, supervise the investment of funds in the reserve.

Not only do these excerpts clearly demonstrate that the managements of Southern industries are fully appreciative of the responsibility resting upon them, but that employers are doing more than paying wages for services per-

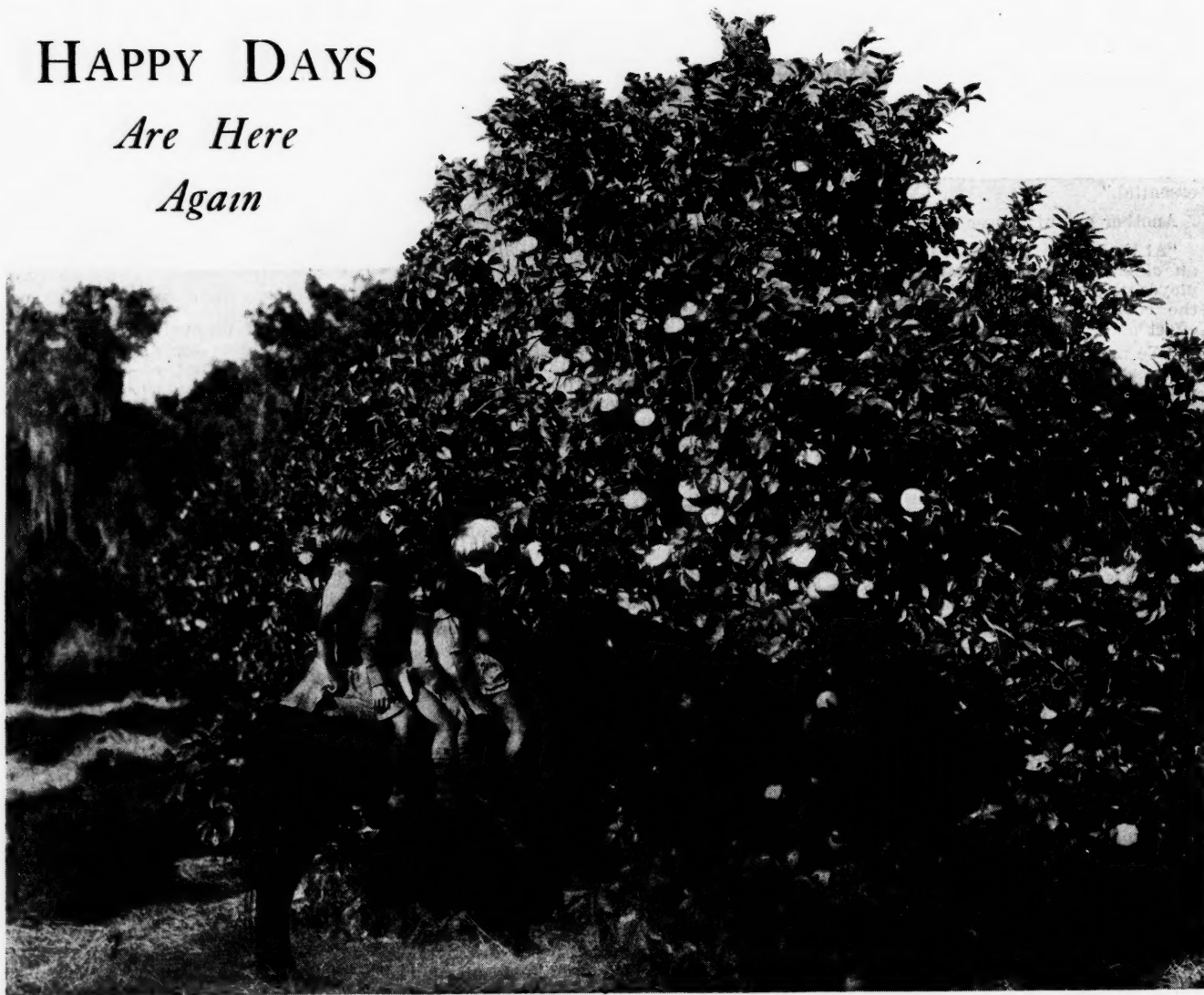
formed. As the president of one of the largest fabricating steel plants in the South writes:

"For several years we have voluntarily and with pleasure and profit permitted departmental heads and certain employees to participate in our earnings. As a matter of fact, we have paid more in pensions than we have in straight dividends. In our plants we work on the incentive pension plan, that is for the extraordinary services we split the savings fifty-fifty with the employee, resulting in a more coordinated relationship and more profit to both. I further believe that serious labor troubles can be avoided if first mutual confidence exists and the employer demonstrates in a material way, rather than by words, that he is not only willing but anxious to pay his men all that he can."

HAPPY DAYS

Are Here

Again



Jean Hewitt, 7 years old, mate of this craft at Howey-in-the-Hills, Florida, and her carefree crew of grapefruit grabbers, did not care a hoot if the photographer did shoot.

On the day this picture was taken, Northern cities were reporting a temperature of 11 degrees below zero.

Reading from tail to head the girls are: Elizabeth Weaver, 8; Lois Howey, 6; Virginia Mare, 6; Juanita Roberts, 5; and Jean herself, who said there were plenty more girls but that she ran out of pony.

Arc Welding

in
1931

14-Story
Office
Building
for
Dallas Gas Co.,
Dallas, Texas,
With
Arc-Welded
Steel Frame

By
J. F. LINCOLN, President,
Lincoln Electric Company,
Cleveland, Ohio

Ultimately this
structure will
be increased to
22 stories

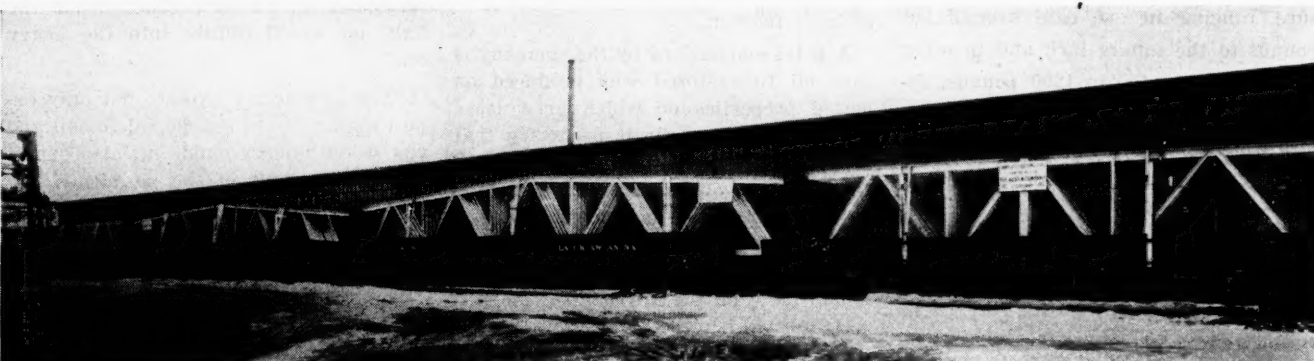
ess have overcome them. Until lately, the use of arc welding was forbidden in general in the fabrication of pressure vessels and similar containers which come under the jurisdiction of insurance codes. This restriction was based on the former limits of weld strength and ductility. In cases where it was possible to obtain welds of the required physical characteristics, the cost of production was almost prohibitive. By placing on the market a completely shielded arc process which economically produces welds of 60,000 to 75,000 pounds per square inch tensile strength and having a ductility at least equal to that of rolled steel, the barrier which prevented the use of the electric arc in the fabrication of these pressure vessels was definitely removed.

The introduction of this shielded arc process is revolutionizing the use of arc welding in the fabrication of many prod-

EVERY year since the late war finds the use of arc welding gaining greater momentum in practically every industry. Regardless of the economic outlook for 1931, it is safe to say that this process will be applied more widely and more frequently than in any preceding year. The development of electrodes during the past year for the welding of

various steel alloys will bring about a much wider application of arc welding, and in turn will permit a wider use of these alloy metals, particularly that of stainless steel and other corrosion-resisting metals.

Like any new process, arc welding has met obstacles to its application, but refinements and developments of the proc-



Fabricated Building Steel From the Mill of the Austin Company, Cleveland, Ohio

ucts and the erection of many types of structures. The arc welding of pipelines will be greatly stimulated. Due to greatly increased speed obtainable by the use of the shielded arc process, greater economies will be effected also in the fabrication of many products and structures. Further stimulus to the redesigning of metal products for arc welded steel construction is provided by the second Lincoln arc welding prize competition, which is offering 41 cash prizes, totaling \$17,500, to designers and engineers who show the greatest skill and ingenuity in applying the advantages of arc welded construction to their designs.

As far back as 1914, the Lincoln Electric Company advocated the replacement of cast iron by arc welded steel construction. Each year since then, an increasing number of manufacturers have realized the advantages obtained through this modern construction. It is safe to predict that during the next 12 months more manufacturers than ever

before will improve their products and reduce production costs and lower their inventory by redesigning their products for arc welded steel instead of castings.

The current movements in various cities against unnecessary noises will undoubtedly effect a greater use of arc welding in the erection of buildings, but its progress in the structural field will not be solely accelerated by its quietness. More and more, the architects, engineers and structural fabricators are realizing the economies which this process offers. The additional strength which the shielded arc process gives to arc welded connections will allay the fears of conservative engineers as to the reliability of this modern construction. It is significant that in one of the largest industrial plants now under construction some 200 arc welded trusses will be used. As more than 100 municipal building codes permit the erection of arc welded structures, and since not a failure has occurred in the 100 arc welded structures which have been erected to date, it is

only logical to assume that an increased number of buildings erected in 1931 will receive the benefits of this modern construction.

Regardless of general economic conditions during 1931, we shall continue to advance and improve, and in this progress arc welding will play an increasingly important part. Just how far we may progress depends in no small measure on industry's intelligent use of electric arc welding.

Will Make Kraft Paper Bags

Richmond, Va.—The American Paper Co., Inc., has acquired the building formerly occupied by the Republic Paper Products Corporation in Highland Park and is installing new machinery for making kraft grocers' bags—flats, squares, self-opening and millinery bags. Production is expected to get under way by April 1.

Storing Oil and Gas in Old Wells

UNDERGROUND storage of oil and gas, as successfully developed by the Union Oil Company of California, Los Angeles, is estimated to save enormous quantities of those natural resources which heretofore have gone unavoidably to waste. Oil is stored in semi-depleted oil sands and oil and natural gas in old producing wells.

As described by the company to the MANUFACTURERS RECORD, oil and gas are placed in semi-depleted wells under pressure, ranging in one case around 900 pounds to the square inch and in other instances from 450 to 1200 pounds, depending on the condition of the wells into which the oil and gas were injected. In two cases, a systematic storage of gas preceded the storage of oil, this being deemed necessary in order to supply a sufficient amount of energy to carry the oil in the producing formations through the sands and to the wells whenever the time might come that production from the wells would be required.

Without this gas in the formation, it was considered very doubtful whether oil could be successfully stored.

In two fields, lighter oil was stored in zones in which the original production was considerably heavier in gravity. The introduction of the lighter oil made the heavier crudes less viscous and more easily recoverable, and for this reason the company expects to recover not only all of the oil injected into the wells, but also more of the original oil in the wells than otherwise it would have been possible to recover.

A point emphasized by the company is that oil thus stored was produced on leased properties on which prior lease agreements had made it necessary that the oil be produced, and where competitive drilling compelled production from the wells in order to protect the interests of both the company and the owners of the property from which it leased the land. Land on the areas into which oil was injected is owned in fee by the company and therefore it is not necessary for the company to produce this oil until it may be required.

In a specific case, the company carried oil by pipeline direct from producing wells to old producers that had ceased to flow, four wells being utilized and oil being pumped into three and gas into the fourth. Half a million barrels of oil were pumped into the wells and 556,000,000 cubic feet of gas added to 600,000,000 cubic feet previously stored in the field. Oil pumped from the producing wells was 34 gravity and in the non-producing wells was 17 gravity, while the oil later produced was found to be 32 gravity, "proving the contentions of those who recommended the experiment that the light oil would diffuse into the heavy oil."

"The production experts not only expect eventually to recover all the oil and gas stored underground, but also expect that as a result of the storage of the light oil in the heavy oil zones it will be possible to recover a larger quantity of heavy oil than would have been possible under regular production methods," the company adds.

Royalties are paid to the lessors for oil stored underground in the same way as though the storage were aboveground.

Mechanical Harvester

for

Sugar Cane

IN December last, an unusual machine rolled out of the shops of the Allis-Chalmers Manufacturing Co., at Milwaukee. It was the first commercial unit of the Falkiner Cane Harvester, a machine weighing 17 tons and said to be the first successful cane harvester ever developed. This machine was the first of 20 built for the Falkiner Cane Harvester Company of America and it was completed just seven weeks after the Allis-Chalmers engineering and shop organizations tackled the job. In ten weeks all were completed and delivered.

The harvester has had a colorful history. Two Australians, Ralph S. Falkiner and Walter G. Charley began work on their first machine about 15 years ago. One of the original machines was taken to Cuba, showing sufficient promise to be purchased by the Punta Alegre Sugar Company. Others were built from time to time, and during the last harvest season the performance of a machine built at New Orleans attracted the attention of large sugar companies. As a result, the Southern Sugar Cane Co. ordered 14 harvesters, the Punta Alegre Sugar Company of Cuba ordered four and the Cuba Cane Co. ordered two.

The Falkiner cane harvester is operated by a crew of four men and does the work of 200 to 300 laborers. Each machine has an estimated capacity of 300 to 500 tons of cane daily. The huge mill at Clewiston, of the Southern Sugar

Cane Co., has a capacity of 4000 tons of cane daily when grinding at capacity. Through the use of the mechanical harvesters the Florida company hopes to decrease materially the cost of harvesting sugar cane, heretofore one of the most expensive items in sugar production.

Several months ago contract was placed with the Birmingham Boiler & Engineering Co., Birmingham, Ala., for steel shapes to be utilized in construction of boxes to be mounted on crawler type wagons for hauling cane cut by the cane harvesters. The mechanically harvested cane is delivered to the wagons in lengths from four to six inches, making it necessary to have solid boxes. The cane cart bodies are 12 feet long, eight feet wide and six feet deep, equipped with trunnions for dumping.

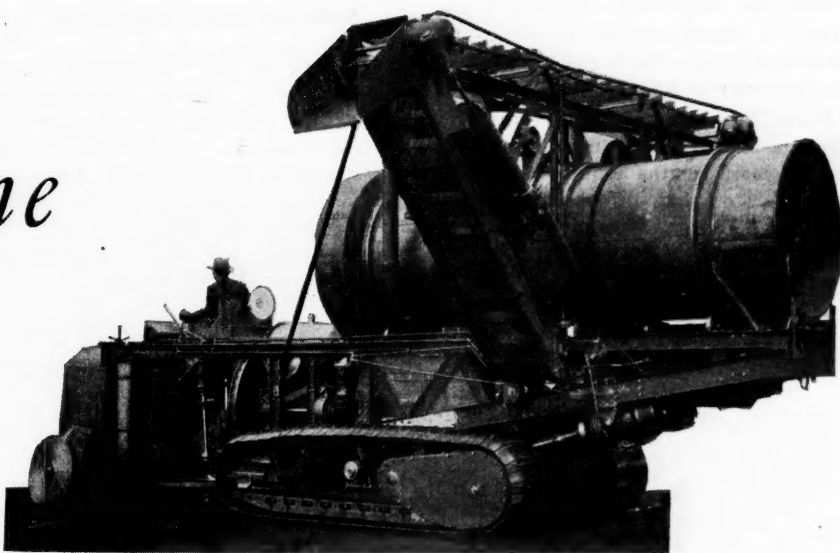
Often the rank growing sugar cane reaches a height of 20 feet and yields 20 to 60 tons per acre. One laborer

might cut and load from one ton to two tons daily by hand, but the mechanical harvester cuts, cleans and loads about 20 tons an hour.

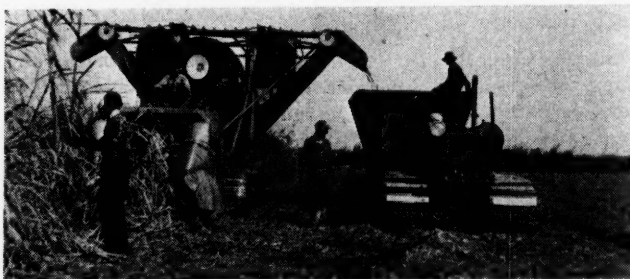
Two rotating discs cut the stalks below the surface of the ground. This lower part has the highest sugar content of the plant, yet was always left in the field as stubble when harvesting was done by hand. The mechanical method also saves stalks which have been blown flat to the ground by storms.

The Falkiner harvester is self-propelled. Two engines furnish power and the machine travels on a crawler track. Speeds range from one-fourth of a mile to 2½ miles an hour. With little effort, the operator sits in a comfortable seat and handles all controls.

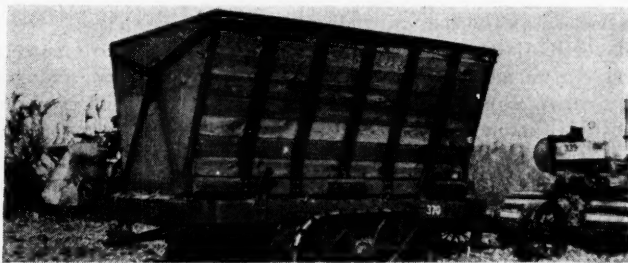
Cut cane is carried back to rotating knives which cut stalks and leaves into short lengths. These pieces are carried into a blast of air which blows off leaves and dirt, the blast being created by a



The Falkiner Cane Harvester



Showing Cane Being Discharged by the Harvester Into Wagon on the Tractor Alongside



Type of Solid-box Wagon Developed to Receive the Short Lengths of Cane

propeller-type fan, mounted on the rear of the machine.

The large rotating drum has on the inner circumference small paddles which pick up the material, then allow it to drop off into the air blast.

The cane itself goes on another conveyor, is carried up the elevators and discharged into a wagon pulled alongside the harvester by a tractor.

From the transportation standpoint there is an advantage in chopped cane, as the short lengths require much less space per ton than full-length cane cut by hand. Thus it is possible to load 30 tons on a freight car and save hauling charges.

Electric lights are used for night work during the cane harvest and shifts can be 24 hours long if necessary.

\$300,000 Hotel Additions

Miami Beach, Fla.—The Roney Plaza Hotel plans to expend approximately \$300,000 for additional facilities, including 165 cabanas, two swimming pools and enlarging of shop space. Plans for the cabanas, which consist essentially of a combination shower, locker and dressing room, are being prepared by Robert Taylor, Miami Beach.

\$1,500,000 Veterans' Hospital

Waco, Tex.—General contract to erect the new \$1,500,000 Veterans' Hospital here has been awarded by the United States Veterans Bureau, Washington, to the Henry B. Ryan Co., Chicago, Ill. Plumbing, heating and electrical work will be awarded later. The various units will include an administration building, two or three patients' buildings, dining hall, kitchen, laundry, garage, storehouse, recreation hall and quarters for twelve or fifteen doctors. The principal structure will be 4 stories and the others two stories. An indoor swimming pool will also be provided.

Natural Gas *as a* Fuel

By P. McDONALD BIDDISON, Birmingham, Ala.*

NATURAL gas is a mixture of gases. It may be described as being composed of the gaseous members of the paraffin series of hydrocarbons together with nitrogen in varying proportions and being partly saturated with some of the liquid hydrocarbons of the paraffin series. Other gases sometimes are found in small amounts in natural gas. These liquid hydrocarbons are almost entirely removed from the gas before transportation, by contacting the gas with an absorbent oil, from which these liquid hydrocarbons are subsequently distilled for the production of gasoline, so that the gas as received by the ultimate consumer contains so little of them that they can hardly be found in chemical analysis.

Carbon, hydrogen and the hydrocarbons, which are combinations of carbon and hydrogen, constitute our fuels—coals, cokes, woods and combustible gases. The nitrogen content of gases is as useless as the ash in coal; it is not combustible and produces no heat. The first two members of the paraffin series of hydrocarbons, methane and ethane, constitute the bulk of the heat-producing constituents of natural gas.

The flame length in natural gas firing may be made such as will best suit the requirements. In a burner in which the total quantity of air required for complete combustion is intimately mixed with the gas and the mixture leaves the

burner nozzle at comparatively low velocity the combustion will be complete within a very short distance, a short flame is produced. If a long flame be desired, the quantity of air mixed with the gas in the burner (primary air) is reduced below that required for complete combustion and secondary air admitted at some other opening, usually above or around the burner, to whatever degree is required to produce the flame length required.

One of the principal advantages of natural gas as a fuel especially in ceramic work is the ease of control of the firing rate and of the distribution of heat. In many instances, the control of firing rate may be made fully automatic, this being advantageous where a constant temperature is desired. Some applications demand a gradually increasing or decreasing temperature and in these cases the ease with which the firing rate of gas can be regulated is a feature.

There are many applications of fuel in the ceramic industry where the presence in the fuel, or products of combustion, of sulphur or other ingredients damages the product if the products of combustion come in contact therewith. Except for some unusual natural gases, little of

these being used in commerce, natural gas is free from such deleterious ingredients. The natural gas supplied in the Southern area is unusually free from sulphur or any other deleterious ingredient and may be applied directly to almost any process with resulting economies in fuel consumption. The products of combustion contain nothing with which the material would not come in contact in any event, nothing but the same constituents we find in the atmosphere. For this reason, lime of exceptionally high quality is produced by natural gas firing, and for this reason natural gas is a premier fuel for open hearth steel making.

Air floated clays for paper sizing are now dried directly in Georgia by natural gas, instead of indirectly by steam coils or hot air circulation. Terra cotta and the finest pottery ware may be burned by direct firing of such gas.

In boiler plants, a high steam output per boiler can be obtained with gas and this same advantage is often secured in various ceramic industries. The labor saving by the use of gas in most applications in the ceramic industries constitutes one of the principal items of its value to the user.

Natural gas now is available in the ceramic centers of Mississippi, Alabama and Georgia in quantities sufficient to fill all clay working requirements.

Extracts from a paper presented by Mr. Biddison, who is consulting engineer of the Southern Natural Gas Corporation, before the recent Conference of Clayworkers at the University of Alabama.

The Romance of Coquina

BY LEONE ROOD, St. Augustine, Fla.

"THERE are no stones in the whole country!" exclaimed one of the Spanish pioneers when it was desired to erect a fort at St. Augustine in the first precarious days of Spanish supremacy. "But there is coquina," Nature answered a few years later.

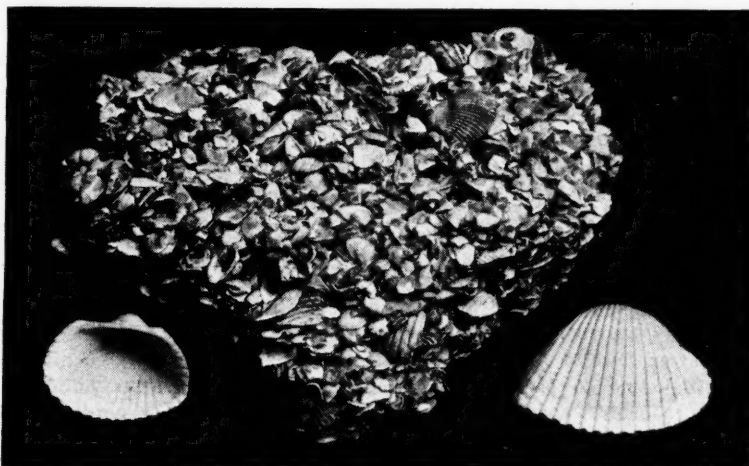
The quarrying and using of the vast accumulation of shell deposit on Anastasia Island as building material was

first recorded about 1580, when the early settlers became active in developing the shell beds on the island. Great slabs were cut out by hand, loaded on ox-carts and hauled to the river's edge on the western side of the island, to be light-

ered over and used to lay the foundations of grim Fort San Marco, the present Fort Marion, which stands today as a monument to the perseverance and sagacity of those determined men of St. Augustine's earliest history. No tourist ever visits St. Augustine without a careful inspection of Fort Marion, nor

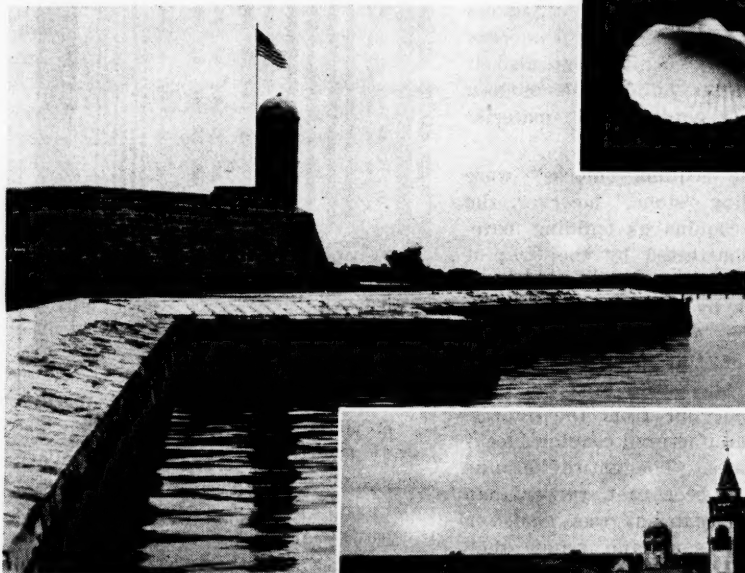
Fort Marion, Known Originally as Fort San Marco

It was begun in 1670 and finished in 1756, and has played a conspicuous role in the history of Florida.



The Kind of Building "Stone" First Used in America

Showing a collection of shells and fragments, held together by their own calcium carbonate. The single shells are $1\frac{1}{4}$ inches and 2 inches wide respectively.



Hotel Ponce de Leon, Completed in 1887

Of early Spanish Renaissance, showing Moorish influence. Mermaids and seashells predominate in mural decorations, suggesting the sea as the source of the shell composite of the walls. The building is described as a monolith since there are no joints, the concrete mixture containing shell fragments having been poured in and rammed down a few inches at a time.



does one fail to ask, "What is this peculiar stone of which the fort is built?"

The answer is the story of the early use of coquina as building material; how it was quarried on the island and brought over in barges; how, year after year, for nearly a century, men toiled to set the great blocks in place. The story tells how the Appalachian Indians worked on it for more than 60 years, paying for their defeat in conflict with their life blood under the lash of the merciless conqueror; for those were merciless days. The visitor is also told of the time when, harassed by enemies from sea and land, the 1200 inhabitants of the settlement, with provisions for four months, sought refuge within the coquina walls, while the city itself was plundered and burned. The fort has often been spoken of in history as impregnable. Strange as it may seem, the reason for its strength lay in the soft, spongy nature of the coquina rock of which it was built. Oglethorpe, planting his batteries on Anastasia Island, bombarded the stronghold for weeks, to no purpose. Coquina-built Fort San Marco, which Philip II of Spain had morosely said must have been built of silver, so great was its cost, stoutly withstood the British cannon balls.

As may be surmised, it did not take long after the discovery of coquina for St. Augustine to become what George Ward Nichols, writing for Harper's Magazine in 1870, called the "Coquina City," adding that in architecture there was nothing like it on the American Continent and comparing it with Rouen, France.

The quarries from which coquina is obtained are so insignificant in appearance that one finds it hard to conceive of the vast storehouse of valuable material contained therein. The tourist driving by might not notice them at all, were not his attention called to them, and even then he would find it difficult to believe that such magnificent structures as the Ponce de Leon Hotel and the Alcazar could emerge from that unsightly area of shell mounds and pits. Beginning at a spot about two miles south of the present lighthouse, and continuing for some distance down Anastasia Island, is the mother-bed of coquina "rock." The strip is less than 200 yards wide and variable in thickness; yet for decades this deposit has been worked with no apparent diminution of supply. In the vicinity of the quarries is to be seen an old Spanish well, 50 feet deep, which shows coquina clear to the bottom, while J. A. Reyes, stone cutter, says he has dug coquina from one pit for over 22 years without exhausting the deposit. Mr. Reyes describes another pit as having a depth of 60 feet.

The United States Department of Agriculture, in a study of the coquina quarries on Anastasia Island, speaks of the coquina deposit as "stratified shell fragments, belonging originally to the coquina clam, and related to the conch, oyster, clam and other mollusks." The report describes the grade in that comparatively small area near the lighthouse as "Anastasia Rock," thus distinguishing it from the vast deposits of loose shell to be found farther down the coast. Some fragments of shell observed in a single piece of coquina are smaller than one's thumbnail; some are extremely minute, but perfect, shells; others are pieces of larger shells, washed and broken by the pounding waves, and cemented together by their own calcium carbonate.

Of Mr. Reyes, it may be said that he was the "re-discoverer" of coquina, as he experimented until he found a method of making coquina blocks by a dry-mixture process, so that the block, instead of disintegrating with time and exposure, really becomes harder. "After seven years," says Mr. Reyes, "it becomes as hard as natural rock. It will not crack or crumble, and its cost is extremely low."

So, St. Augustine is called the "Coquina City." Not only does it possess historic relics, composed of ponderous slabs of hand-cut coquina, but also it has building after building of modern coquina-block structure, ideal material for its climate.

Before these coquina "blocks" were used as building "stone," however, the feasibility of coquina as building material was demonstrated by the firm of Carrere & Hastings, New York, when they undertook to build the great Hotel Ponce de Leon, at St. Augustine. In construction of this beautiful edifice, loose coquina shell was used; not the solid blocks cut out from the quarry, nor yet the manufactured coquina blocks of modern times. The entire building is said to have been cast, rather than built. All the material was made on the spot—white sand and yellow shell fragments were mixed and made into a concrete mass, then poured into a framework prepared to receive it and rammed down, three inches at a time. It is said there is not a joint in the whole building. Later, the Alcazar and Cordova hotels, various public buildings and private homes arose, and the quarries on the narrow, cedar-grown island yielded their store of material, with no apparent diminution.

A new chapter in the history of coquina is about to be started. It is being experimented with by New York stone specialists. The purpose is to harden the stone and lessen its porosity with a view to developing it for use in northern climates.

\$1,000,000 Building Completed

Representing a type of modernistic architecture, the new \$1,000,000 Sinclair Building at Fort Worth, Tex., originally called the Dulaney Building, has been completed and approximately half the floor space will be occupied as the Southwestern headquarters of the Sinclair Oil & Gas Company and the Sinclair Refining Company. The building is 17 stories, with a base of Minnesota granite and masonry in white Texas rough sawn limestone. A set-back at the fourteenth floor provides a maximum of light and air for the street below. With approxi-

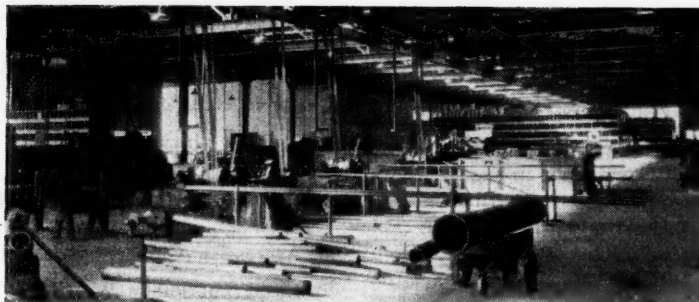


New Sinclair Building at Fort Worth

mately 4000 square feet of rentable space on each floor, 17 office suites have been provided on each, with doors and panels in brown manogany. Interior decorations give a general impression of metal, with trimmings of bronze and silver. Basement and first two floors are provided with air-cooling equipment for summer and indirect heating equipment for winter. Two entrances are provided for the lobby. The building is owned by R. O. Dulaney and was erected after plans by W. G. Clarkson & Co., Fort Worth. Harry B. Friedman, Fort Worth, was general contractor.

Hialeah, Fla. — Extensive improvements to involve a cost of \$500,000 have been announced by the Miami Jockey Club, Inc., of which Major Barclay H. Warburton is president.

Grinnell Plant



Pipe Threading Machines and Fitting Storage Bins

THE Grinnell Co., Providence, R. I., last year completed at Charlotte, N. C., a two-story office building, 42 by 120 feet, with basement, and a main plant building, 104 by 318 feet, with an adjoining pipe storage building, 43 by 200 feet. The office accommodates all departments connected with supply sales activity, contracting, American Moistening Co. and other activities of the firm, including large engineering departments for heating, power piping and fire protection. The main plant is divided into two sections: A warehouse for stock of pipe, fittings, valves and pipe contractors' supplies, the other section being used for a pipe fabricating plant, having cutting and threading facilities for pipe up to and including 12 inches. A side track runs into the building in the pipe storage section and the whole plant is laid out to facilitate the handling of pipe from cars to storage, thence to machines and having loading facilities for

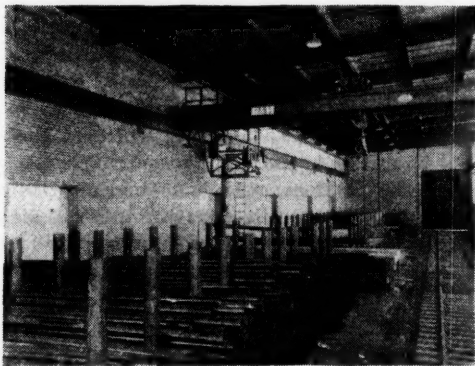
stock and fabricated pipe. Loading and unloading is accomplished by an overhead traveling crane. Buildings are sprinkler equipped throughout and the plant is heated with Grinnell Thermoliers, the office being heated with a combination Thermolier system and radiators. Construction was carried out by the Gaston Construction Co., Gastonia, N. C. J. E. Sirrine & Co., Greenville,

S. C., acted as engineers. Sub-contracts were let as follows, all of Charlotte except as otherwise designated:

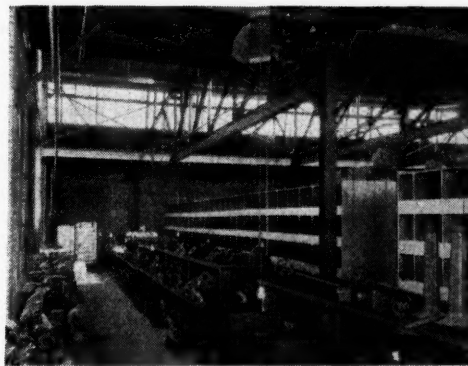
Roofing—C. G. Ray & Co.
Lumber—E. C. Sweeney Lumber Co.
Concrete (ready mixed)—Caldwell Construction Co.
Excavation—Blythe Brothers Co., Inc.
Limestone—J. J. Morton
Brick—Palmetto Brick Co. and Hood Brick Co.
Mortar materials—Tucker-Kirby Co.
Glass and putty—Pritchard Paint & Glass Co.
Paint (woodwork and walls)—Pritchard Paint & Glass Co.
Hardware (Corbin)—Smith-Wadsworth Hardware Co.
Millwork—Charlotte Woodworking Mfg. Co.
Electric Installation—Harrison-Wright Co.
Structural Steel—Carrollina Steel & Iron Co., Greensboro, N. C.
Plumbing—Gastonia Plumbing & Heating Co., Gastonia, N. C.
Steel sash—Truseon Steel Co., Youngstown, Ohio
Tile Coping—Pomona Terra Cotta Co., Greensboro, N. C.
Painting (steel)—Detroit Graphite Co., Detroit, Mich.
Rolling Steel Doors—J. G. Wilson Corp., Norfolk, Va.



Office
Building



Pipe Storage



Fitting Storage



Charlotte, N. C., Plant of the Grinnell Company of Providence, R. I.

Radio Chain for the South

The South as a section is to be given a position of prominence in the country's radio broadcasting service through the opening of the Dixie Chain by the Columbia Broadcasting System on March 23, with the key station at Charlotte, N. C. Most of the programs will originate from the studios of WBT at Charlotte, where the Columbia system will maintain a complete departmental organization.

The network will be officially opened with a program which includes speeches by several Governors and on the evening of March 25, at 8:15 o'clock, Eastern Standard Time, Frank Gould, president and editor of the MANUFACTURERS RECORD, will deliver the first address from the Washington studio, "The Present Day Industrial South," on invitation of the Columbia System.

Eleven stations already are included in the basic Dixie network: Asheville, WWNC; Atlanta, WGST; Birmingham, WBRC; Charlotte, WBT; Chattanooga, WDOD; Little Rock, KLRA; Memphis, WREC; Nashville, WLAC; Savannah, WTOG; New Orleans, WDSU, and Knoxville, WNOX. Supplementary stations at Norfolk, WTAR, and Roanoke, WDBJ, may be added on occasions, and three additional stations in Florida and five in the Southwest also may be placed on the list.

Heads Railway Engineering Association

St. Louis, Mo.—At the annual convention of the American Railway Engineering Association in Chicago, L. W. Baldwin of this city, president of the Missouri Pacific Lines, was elected president of the association. Other officers elected at the same time include: W. P. Wiltsee, Roanoke, Va., chief engineer of the Norfolk & Western Railway Co., vice-president; E. H. Fritch, Chicago, secretary; A. F. Blaess, Chicago, chief engineer of the Illinois Central System, treasurer. The following directors were elected: E. A. Hadley, St. Louis; S. S. Roberts, Washington, D. C., and T. T. Irving, Toronto, Ont.

\$700,000 Heating Plant

Washington, D. C.—The Department of Public Buildings and Public Parks plans to erect a central heating plant at a cost of \$200,000 for the building and \$500,000 for equipment. The structure will be 180 by 91 feet, 46 feet high. De-

sign and construction will be under the supervision of Lieut.-Col. U. S. Grant, 3d, director of the department. D. H. Gillette is chief of engineering.

PARKERSBURG ACTIVE

An Aggressive Citizenry Backs Program of Public Works

Parkersburg, W. Va., March 14.—[Special]—Parkersburg is successfully coping with conditions resulting from the business recession. An aggressive Board of Commerce, a loyal group of public officials, and a spirited citizenship are factors in the movement for improved conditions in the city.

Within a month the estimated 500 unemployed of the city will be engaged on a public-works program for which a bond issue of \$1,000,000 was recently voted, says Geo. A. Cooper, executive secretary of the Board of Commerce. Indications are that the State Sinking Fund Commission, Charleston, to which all bond issues must first be offered, will take the entire issue. The program mapped out calls for extension of water mains to a section recently annexed; enlargement of several existing water mains; extension of the sewer system; rehabilitation of the fire department, including the erection of two new fire houses and the purchase of fire apparatus and installation of an alarm system. The City Hospital will be enlarged, the City Building will be improved, and public parks are to share in the improvements. Work of extending the water mains will proceed immediately, as this department has money already available to initiate the work under direction of Leland G. Merrill, city engineer, and Morris Knowles, Inc., Pittsburgh, consulting engineers.

All of the city's unemployed have been registered; it is planned to give them the call for work in order of greatest need as the city's construction program gets under way.

The diversity of Parkersburg's industries is largely responsible for the city's relatively prosperous condition. Practically all plants have furnished at least part-time work to employees, making it possible to increase noticeably the number of workers. Buildings for the second unit of the Viscose Company's rayon plant, estimated to have involved an expenditure of \$5,000,000, have been completed, and new machinery is now being installed.

Mr. Cooper cites the very successful results obtained in the city for funds for the Red Cross, the Board of Commerce and the Community Chest, as indicative of the city's spirit. All three of these drives were over-subscribed.

Unemployment Insurance Survey

Information on unemployment insurance is presented in a monograph, in a series on social insurance, by the Metropolitan Life Insurance Company, New York. The brochure is a resume of the principal features of unemployment insurance in operation in foreign countries and in the United States at present, with a summary of the provisions, scope, contributions, amount of benefits, conditions under which benefits are paid, and other details of a few voluntary plans in the United States and governmental schemes in foreign countries.

All such operations in the United States are entirely voluntary and are limited to single industries or firms, says the booklet. At this time, about 150,000 workers are estimated to be covered. Unemployment insurance in Great Britain, Germany and Switzerland is comprehensively described.

American Industry Platform

Industrial leaders from all parts of the country will meet in New York in June on a call issued by President John E. Edgerton of the National Association of Manufacturers, to frame a platform of American industry for 1932. The original platform was adopted in 1920 and was redrafted in 1924 and 1928, and now is to be brought up to date.

The new platform, like the earlier ones, will be broad in scope, non-partisan and non sectional, and will embrace the composite views of business men who are expected to gather for the purpose. Planks in the 1928 platform covered the judiciary; regulation of combinations; international relations; foreign trade policies; tariff; agriculture; government in business; taxation; Federal Reserve system; merchant marine; transportation; railroads; waterways; highways; commercial aeronautics; flood control; private employment relations, and immigration.

As in the past, the platform will be presented to the national convention of the two leading political parties, in 1932.

\$1,100,000 Hospital

Tuscaloosa, Ala.—The U. S. Veterans Bureau, Washington, D. C., opens bids April 21 for construction of the \$1,100,000 U. S. Veterans' Hospital buildings and utilities here. Separate proposals will be received for general construction, including a radial brick chimney; plumbing, heating, electrical work and outside distribution systems; electric elevators; refrigerating and ice making plant; steel water tank and tower.

IRON, STEEL AND METAL MARKET

More Than Normal Improvement in Steel for the Season

Pittsburgh, March 16—[Special.]—At a time when observers of general trade state that while there is some seasonal improvement since the turn of the year, but scarcely as much as usual, steel has been showing much more than its usual improvement for the time of year. The daily rate of production last week was just about 50 per cent over the average rate during December, when the ordinary seasonal swing makes an increase of say 15 to 20 per cent.

Steel is not booming by any means, however. The explanation of the apparent anomaly between steel and general business is that steel, being a highly fluctuating commodity, had sunk to a lower degree of activity than business in general, whereby it could easily rebound sharply, in point of percentage, without reaching what from a long range view would be regarded as an active stage. Steel ingot production was at slightly under 25,000,000 tons a year in December and is now at 37,000,000 tons or more, but capacity is around 67,000,000 tons. The last official ascertainment showed about 63,000,000 tons, for December 31, 1929, while there has since been much new construction. In relation to capacity, steel production is at about 56 per cent.

The official report of steel ingot production in February showed 15 per cent gain over the January rate, rather remarkable since February has usually shown but a slight gain, January and March being the months of more marked seasonal gain. The rate was rising during February and there has been promise of additional increases this month. The Steel Corporation's unfilled tonnage statement was not in keeping with this general picture, as it showed a decrease of 167,157 tons during February in unfilled obligations, whereas the usual thing has been for February to show an increase, that having been the case in six of the last eight years. There is also the point that each of the four months preceding February had shown an increase. The importance of this report is frequently exaggerated, however, for it must be remembered that it is made up of a variety of obligations, including contracts that may not be specified against for a long time if ever. What keeps the mills going is shipping orders and with such prompt deliveries being made it is doubtful whether the sum total of all shipping orders on books at

a given moment represents more than two weeks of work. The total unfilled obligations reported for the end of February, however, was 3,965,194 tons, and that represents the volume of shipments there would be in 4½ months at a 60 per cent operating rate.

Fabricated structural steel lettings vary widely from week to week but in a general way have averaged as heavy since the first of the year as during the late months of last year and there is much work now being figured on.

The preliminary statement of automobile production in February shows 230,364 cars and trucks, United States and Canada, against 178,399 officially reported for January and 141,161 in November, the low month. This month will run considerably heavier than last, or at around double November. This is a very sharp recovery, speaking in terms of proportion, but it still leaves the industry decidedly dull, and not taking as large a percentage of such steel as is made as it did in either 1929 or 1928. It is still one of the poor customers of the steel industry, various other customers doing relatively better.

Mills making various finished steel products have a new policy as to price quoting. They are getting away from the quarterly idea and there have been few formal openings of order books for second quarter, old prices being simply continued for current orders. This would leave the way open for mills to attempt a price advance at any time. It was not feasible to make general advances for second quarter, and now the mills would not have to wait for third quarter. An advance has been under way in strips, and wire mills have announced \$2 a ton advance on all products except fence.

Mixed Trends in Metals Prices—

Silver Advances

New York, March 16—[Special.]—Price movements of the non-ferrous metals have been mixed during the past week. Copper declined a half cent per pound to 10 cents; lead was reduced \$2 per ton to 4½¢ per pound, New York. On the other hand silver went into high ground for the year, selling above 30¢ per ounce as against the low of 25½¢ of a few weeks ago. Antimony advanced to 7¼¢ per pound, duty paid, because of the strength in silver. Zinc dropped and tin was virtually unchanged.

Industrial conditions continue to im-

prove slowly in most cases though rapidly in a few instances. The automobile industry is doing well. Production of cars and trucks in the United States and Canada during February is estimated preliminarily at over 220,000 units while schedules for March call for an output of 300,000 vehicles. Automobile makers have been buying raw materials freely, including steel and non-ferrous metals.

The steel industry forges ahead slowly, with average operations now 56 per cent of capacity. The building industry is very active and affords a good outlet for metals. New uses for metals are being developed constantly. The Bureau of Mines has just put out a report for the aluminum industry in 1930, showing several new uses of the metal in various alloy combinations, shapes and forms.

The advance in the price of silver has been as rapid as was the decline a few months ago. The reason for the change in sentiment is not quite clear because the silver market is the most complex one among the metals. Better sentiment is partly due to the fact that governments are taking cognizance of the silver problem and because of the prospects of international conferences working to the end of stabilizing the metal. This outlook for better days in the metal causes consumers and speculators to buy freely. This buying of course imparts momentum to the market and is an aid to the better sentiment which first preceded the actual purchasing.

The price of antimony has risen in sympathy with silver since antimony is largely a product of China. Quicksilver prices are unchanged at \$101 to \$103 per flask of 76 pounds. The trend of platinum prices has been downward.

The price of copper declined because of exceedingly poor demand. Sales for export the first half of the week have averaged no more than 250 tons daily or only one-tenth of what should be daily sales. Domestic purchasing has been very quiet. By Monday some sales were being made at 10¼¢ as against 10½¢, the quotation at the end of the week. By Wednesday, sales were being made at 10¢ per pound.

The downward turn of prices surprised and disappointed many. A prediction had appeared in print recently that copper would be selling at 14¢ by the middle of April. Though this was perhaps an extreme prediction, it at least showed the general style of optimistic sentiment prevailing. The declines in copper were first started by second hands, were fol-

lowed by custom smelters and finally reached by the primary producers. In other words, relatively unimportant producing and selling factors were responsible for the change in prices. But of course a market, like a chain, is no stronger than its weakest link.

On Thursday the copper market showed feeble attempts to rally. Effective that morning Copper Exporters, Inc., reduced their price 50 points, or $\frac{1}{2}$ c per pound, to 10.30c c. i. f. European ports, with a provision that after 1000 tons had been sold the quotation would automatically become 10.55c. The quota was sold by noon and thereafter the price was 10.55c, about 2000 tons having been sold during the day.

This strengthening of the export market sent up the domestic price nominally at least from 10c to 10 $\frac{1}{4}$ c. However in the absence of sales in the local market the price was not tested and it was suspected that in fact the copper market was no stronger. The idea of selling for export at two prices in one day was a new one and there are many skeptics who believe that such a style of business will not succeed.

The price of zinc dropped \$1 per ton late in the week to 4c per pound. East St. Louis. Demand was very quiet even after the price reduction was made. A deadlock still exists between ore buyers and sellers, but the price is still supposedly \$25 per ton, which is a low figure in the light of market history of recent years.

Lead demand was fairly good at the middle of the week following the \$2 per ton cut in price, but thereafter the market became dull again.

The tin market has been the steadiest for several months. For several days during the past week the price here was 27 $\frac{1}{2}$ c per pound on an average. Demand has been very light.

February copper statistics were somewhat disappointing. Refined stocks declined less than 300 tons, though total refined and blister stocks decreased over 8000 tons. Daily production was 10 per cent greater than during January. Shipments declined nearly 6000 tons.

Lower Pig Iron Price Stimulates Buying Somewhat

Birmingham, Ala., March 16—[Special.]—Steady buying of pig iron continues and the aggregate runs above the make. The orders are still in small lots with early delivery set out. The lower base price, \$12 to \$13, No. 2 foundry, in the home territory has stimulated the market a little but there has been no inclination to buy into the future. Books

are not yet authoritatively announced opened for the second quarter but statement is reiterated that all business is being accepted. Reduction of surplus stock on furnace yards continues. With exception of the No. 1 blast furnace of the Republic Steel Corporation, which may be brought into commission this week, no change in schedule of iron making is given out.

Gulf States Steel Company, with a single blast furnace at Gadsden, switches from basic to foundry as its own needs are satisfied and E. M. Barnes, a well-known pig iron salesman of the district is marketing its surplus iron. In the past, the Tennessee Coal, Iron & Railroad Company has been known to market some foundry iron also.

Woodward Iron Company is pushing the relining of one of its Woodward furnaces and will shortly be in position to increase its make.

The cast iron pressure pipe interests are steady melters and new lettings indicate greater activity as spring comes in. Recent awards to Alabama pipe makers include good tonnage not only from points in the South and middle-West but from the far West with a 3400-ton order for the Philippine Islands. This interest will go into spring with a splendid order book. Further projects are under consideration.

Other melters of pig iron indicate improved conditions, with prospects that the buying in small lots will not be changed for some time to come.

No change is noted in steel activities of the district; gauged on ingot production, with 16 out of 23 open hearth furnaces in operation, estimate is that operations are at a pace about 65 per cent of capacity. New orders for fabricated

shapes are reported, in the main in tonnages less than 100. The aggregate is quite satisfactory, considering the well-filled order book. Plate and sheet still in good demand and Alabama-made sheet is finding a market on the Western coast. The two mills on sheets are doing well, everything considered. The plate mills also are doing fairly well.

Interest is manifest in what will take place at the annual meeting of the Gulf States Steel Company at Wilmington, Del., on March 30 and at the annual meeting of the Republic Steel Corporation at Jersey City on April 8. Stockholders of both concerns will elect directors. For some time the report has been current that three directors will be chosen in Gulf States Steel who are friendly to the Cyrus Eaton and Otis & Co. interests, making six out of nine directors so constituted. Reports for months have tended toward an acquisition by the Republic of the Gulf States Steel, though no authoritative statement emanates from any direction.

PIG IRON

No. 2 foundry, 1.75 to 2.25 per cent silicon, \$12.00 to \$13.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$12.50 to \$13.50; iron of 2.75 to 3.25 per cent silicon, \$13.00 to \$14.00; iron of 3.25 to 3.75 per cent silicon, \$14.50 to \$15.00.

OLD MATERIAL

Steel rails	\$11.00 to \$12.00
Steel axles	14.00 to 14.50
Iron axles	14.00 to 15.00
Heavy melting steel.....	9.50 to 11.00
No. 1 cast.....	10.00 to 10.50
Stove plate	8.50 to 9.50
No. 1 railroad wrought.....	9.50 to 10.00
Car wheels	10.00 to 11.00
Tramcar wheels	10.50 to 11.50
Machine turnings	7.50 to 8.00
Cast-iron borings	7.50 to 8.00
Cast-iron borings (chem.)...	12.50 to 13.00
Rails for rerolling.....	11.25 to 11.75

Roanoke County, Virginia, votes April 14 on a bond issue of \$350,000 for the construction and improvement of schools.

All-Steel Filling Station in Little Rock



This all-steel filling station of the Baker Oil Co., subsidiary of the Mid-continent Oil Co., at Little Rock, Ark., is attractive in appearance, fireproof and is easily kept clean. It was erected by the Columbian Steel Tank Co., Kansas City, Mo., and the building itself is 28 by 80 feet. Fluted Doric steel columns were utilized to relieve the flat panel effect.

HIGHWAYS AND MOTOR TRANSPORT

Tarvia-Lithic Plant Under Way

Roanoke, Va.—The Barrett Co., New York, is constructing a plant near Roanoke for the production of a road and street covering material sold under the trade name of Tarvia-Lithic. The plant is being built in the quarry of the Rocky Dale Stone Co., about three miles from Roanoke on the Norfolk & Western Railroad, and is expected to be in operation about April 15. It is one of a number of such plants which the Barrett company has built in various sections of the country. The material produced is composed of a limestone aggregate and a specially refined Tarvia binder, the mixture being delivered to destination in railroad cars or trucks and laid cold. The Semet-Solvay Engineering Co., New York, has the general contract while the Central Manufacturing Co. and the H. H. Carter Lumber Co., are supplying building materials. Excavation contract was awarded to M. W. London and electrical work to the Jefferson Electric Company, all of Roanoke.

\$1,115,000 Arkansas Roads

Little Rock, Ark.—Contracts representing an expenditure of \$1,115,000 have been awarded by the State Highway Commission, principally for work on two important cross-state highways. Approximately 29 miles of state highway No. 70, the Memphis-Little Rock route, will be built at a cost of nearly \$500,000, and 33 miles of state highway No. 64, the Little Rock-Fort Smith road, will be built at a cost of \$634,000. One other project was included in the contracts—1.5 miles of grading on the El Dorado Junction City road in Union County.

Pan American Commercial Conference

Washington, D. C.—Many phases of highway development, from the original plan to the finished project, will be discussed at the Fourth Pan American Commercial Conference to be held at the Pan American Union here from October 5 to 12. Delegates are expected to attend the Conference from each of the American republics and to consider the general subject of highway development from the following angles: Highway construction, highway finance, relation of highways to other means of transporta-

tion and commercial associations and highways. In addition to a discussion of these general subjects, the question of financing and building the Pan American Highway will be considered, as well as other important questions: Trade barriers and their elimination; development of inter-American commerce based upon international agreements; means of promoting tourist travel among the American republics; various phases of transportation and communication development; simplification of consular and cus-

toms procedure; currency stabilization and means of more efficiently gathering the most important types of statistics, and national and international questions of a juridical nature affecting commerce.

Arkansas Boosts Gas Tax

Little Rock, Ark.—Governor Harvey Parnell has approved an Act of the Legislature which increases the gas tax from 5 to 6 cents. The increase becomes effective immediately.

Novel Features in Truck for Power Company Use

New and interesting features are embodied in a truck especially designed for the use of high tension transmission line construction crews, recently placed in service by the Alabama Power Co. at Atmore, in the Mobile division. By the use of Met-L-Wood, manufactured by the Met-L-Wood Corp., Chicago, it is said the weight of the truck was reduced 750 pounds over trucks of a similar type, and 80 per cent more box space was provided. The material is described as a thin strip of wood with a layer of cloth on each side, and thin strips of metal on the outside of the cloth, the edges being lapped over to keep out water, and additional protection to edges being afforded by metal molding. Masonite, a building board composed of wood fibers compressed under high pressure, and made by the Masonite Corporation at Laurel,

Miss., was used for the roofs of the cab and truck body.

Seats to provide increased riding comfort and a one-piece windshield for improved vision are features. The cab is mounted separately from the body on a three-point spring suspension. All posts are of steel channels, and instead of conventional hooks for wire and rope, small chains are provided. The winch with which the truck is equipped is a Mead-Morrison, 12,000-pound pull. Power is obtained by take-off from the transmission, there being two speeds forward and one reverse. Five hundred feet of half-inch Roebling wire rope is used.

The truck, a Model FC 2-ton Reo, was purchased through the Stout Motor Co., and the body was built by the Alabama Truck Equipment Co., both of Birmingham. It is equipped with heavy duty balloon tires, dual tires being used on the rear.

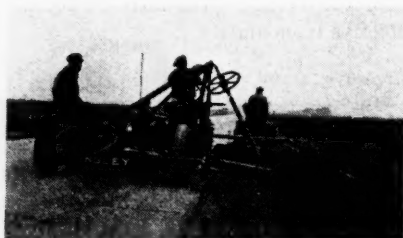


Special Truck for Alabama Power Co.

NEW AND IMPROVED EQUIPMENT

Shoulder Finishing Machine

A shoulder finisher designed and built by the Insley Division of the National Equipment Corporation, Milwaukee, Wis., has been announced. The purpose of the machine is to shape a road shoulder and berm accurately once the proper amount of dirt has been put on the shoulder. The machine consists of a platform



Finisher, Showing Tractor on Shoulder

mounted on pneumatic tires, this platform carrying an A-frame and column supporting a set of blades conforming to required specifications. It is made with blades of three sizes—8 feet, 10 feet and 12 feet 6 inches—and finishes shoulders from 5 to 11 feet in width. A unique feature of the unit is the use of a guide bar near the rear of the machine; the bar runs along the edge of the finished slab and holds the entire machine in exact line so that the relation of the edge of the slab to the edge of the berm is automatically fixed. The main and slope blades are both adjustable. When used on jobs other than concrete slab, steerable wheels enable the operator to line up the machine with the edge of the pavement by means of an indicator and get the same results as on a slab job by means of the guide bar. The machine is pulled by a tractor running on the shoulder rather than on the slab, making it possible to finish shoulders closely behind the paver.

Electric Tumblemixer

The U. S. Stoneware Company, New York, manufacturers of stoneware products, announce a new "U. S. Standard" electric tumblemixer, designed for economy, efficiency and sanitation in mixing dry or liquid solutions, such as extracts, syrups, food products, essential oils, perfumes, drugs, condiments, medicines, pharmaceuticals, inks, paints, etc. The motor driven barrel is of heavy chemical stoneware. Bearings on the hangers are of scraped babbitt fitted with grease

cups, while grease cups are also fitted on the jack shaft of the reduction gear. The motor base is cast integral with the machine, which is made in sizes of 10 to 25 gallons.

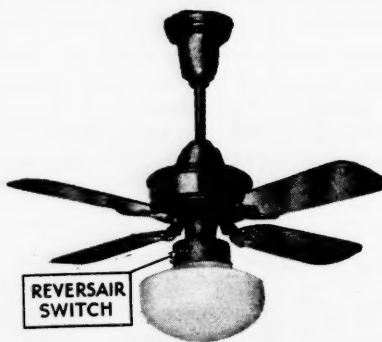
Stationary and Reversing Fans

Two new units have been added by the Century Electric Company, St. Louis, Mo., to their line of portable, ceiling and ventilating fans. One, an eight-inch, 1-speed stationary fan for alternating current, has a fully-enclosed, pressed steel frame, induction type motor,



Adapted to Sidewall Mounting

pressed steel stand, steel wire guard, steel blades, phosphor bronze bearings and a switch in the base. The Century wool yarn system of lubrication is used, making it necessary to oil the fan only once each season. It is finished in black



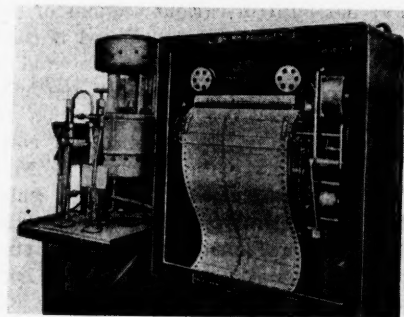
Ceiling Fan, Reversible Motion

and may be arranged for sidewall mounting. The other unit is the Century "Reversair" 36- and 60-inch alternating current ceiling fan, electrically arranged to reverse the direction of rotation and thus the direction of movement of the air, permitting either upward or downward air delivery. Instead of employing mechanically moving parts to reverse the air movement, a switch on the fan or wall is used.

Measures and Controls Heating

Effect of Fuel Gas

An instrument for checking the heating effect of fuel gas has been developed by the Brown Instrument Company, Philadelphia. The device is called the Brown Flame Analyzer, and is described as capable of measuring, recording and automatically controlling the heating effect of any gas. Emphasis is placed on its



Brown Flame Analyzer

value to gas companies, industrial plants using producer gas, and to new plants supplying butane gas to small communities. Where necessary to dilute a rich gas or to enrich a lean one, the flame analyzer, it is said, would not only observe and record the quality of the output, but would make possible a dependable automatic control of the mixture insuring a uniform product. An accompanying illustration shows a Brown Flame Analyzer as installed in the plant of the Louisville Gas & Electric Company, Louisville, Ky.

Machine for Forest Planting

A duplex reforestation machine developed by H. R. Walling of the Champion Sheet Metal Co., Inc., Cortland, N. Y., will plant as many as 2500 trees an hour, according to the New York Conservation Department, Albany. The machine is drawn by a tractor; its operation requires two men in addition to the driver, while a fourth man serves as relief operator and replenishes the machine with trees. It cuts two furrows, 6 feet apart, by means of shoe-shaped plows attached to the sides of a low platform, with sod-cutters running ahead of the plows. The machine has a carrying capacity of about 6000 three-year transplants and is adapted to the planting of trees from 1-year seedlings to 4-year transplants.

CONSTRUCTION DEPARTMENT

and

NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Fla., Pensacola—Shell Producers Co., Harrison and Losano Sts., Tampa, reported, has contract at \$87,000 for filling, grading, for Bureau of Yards and Docks, Navy Dept.; C. H. Turner, Brent Bldg., Pensacola, at \$271,000 for filling, grading and bulkhead for runway. 3-5

Ky., Scottsville—R. R. Pitchford, Publisher of Scottsville Times, and associates, reported, interested in establishment of emergency airplane landing field.

La., New Orleans—Laclede Steel Co., Arcade Bldg., St. Louis, Mo., reported, has contract for 3250 tons concrete bars for retaining wall at airport Lake Pontchartrain, for Orleans Levee Bd.; John Klorer, Ch. Engr. 1-15

La., Opelousas—City, reported, plans establishing airport.

Miss., Laurel—City, M. W. McLaurin, Mayor, will readvertise for bids for construction of proposed hangar; 80x100 ft.; capacity of 8 planes; bids received on steel and other type construction; Paul C. Klyce, City Engr. 1-1

Mo., Robertson—Liberty Aircraft Sales & Manufacturing Corp., incorporated; Richard D. Hugh, Ray E. Smith.

N. C., Charlotte—Weeks Aircraft Corp., Etting O. Weeks, Milwaukee, Wis., reported, constructing hangar; steel and conc.; 100x80 ft.; capacity for storing 20 planes; cost \$15,000. 11-27

Okl., Tulsa—City, reported, plans establishing airport.

S. C., Charleston—City, reported, authorized issuance of \$60,000 bonds for purchase of land and for reconditioning the airfield at Ten Mile.

Tenn., Memphis—Memphis Airport Comsn. let contract to H. A. McGuire & Co., Inc., 624 Dermon Bldg., for addition to hangar Hallyford Rd.; 20x120 ft.; steel; conc. floors; built up roof. 3-5

Tex., Amarillo—Dept. of Commerce, Aeronautics Branch, Washington, D. C., reported, soon begin construction of airways radio beacon to be installed near here at intersection of Highways No. 33 and 66; M. L. Ericksen, Architectural Engr.

Tex., Duncan Field, San Antonio—U. S. Government, Capt. H. B. Nurse, Constr. Q. M., Fort Sam Houston, plans 1 story depot shops building; steel-truss roof; conc. floor.

Tex., Fort Worth—Dallas Construction Co., 3106 Commerce St., has contract at \$120,000 for moving 425,000 cu. yds. earth at Municipal Airport; hauling sub-contracted to Stinson Construction Co., Waco. 3-12

Va., Norfolk—Col. Thomas W. Shelton, Bank of Commerce Bldg., and associates, reported, interested in development of 48-acre airport by the city; Pittsburgh Aviation Industries Corp., also reported, considering inauguration of passenger service with direct connections to Los Angeles, Calif.

Va., Norfolk—R. R. Richardson & Co., Natl. Bank of Commerce Bldg., Norfolk, low bidder at \$82,697 for extending hangar and shop buildings at Naval Air Station. 3-5

Bridges, Culverts and Viaducts

Proposed Construction

Alabama—State Highway Dept. has low bids for 2 bridges. See Roads, Streets and Paving.

Ala., Birmingham—City, A. J. Hawkins, City Engr., and Louisville & Nashville R. R. Co., W. H. Courtenay, Ch. Engr., Louisville, completed plans for viaduct over tracks, Green Spring Ave., \$18,000.

D. C., Washington—Comms., D. C., District Bldg., open bids Mar. 25 (new date) for removal of existing bridge and building steel arch and stone faced rein. conc. abutment bridge, Connecticut Ave. over Klingley Valley; former bids rejected. 3-12

D. C., Washington—Following estimating on New York Ave. bridge repairs, bids due Mar. 25 at office of District Comms., Dist. Bldg.: National Construction Co.; Corson & Gruman Co., 33rd and K Sts., N. W.; Highway Engineering & Construction Co., Seventh and T Sts., N. E.; M. Cain Co., Inc., 3315 Eighth St., N. E.; Rust Engineering Co., District Natl Bank Bldg., all Washington; Peter D. Adams, Old Town Natl. Bank Bldg.; American Bridge Co., Continental Bldg., both Baltimore, Md.; Farris Engineering Co., Empire Bldg., Pittsburgh, Pa.; Shoemaker Bridge Co., 4 S. 15th St., Philadelphia, Pa.; Sayre Steel Construction Co., 50 Church St., New York. 3-12

Georgia—State Highway Bd. receives bids for 6 bridges. See Roads, Streets and Paving.

Kentucky—See Roads, Streets and Paving.

La., Coshatt—State Highway Comsn., H. B. Henderlite, Engr., Baton Rouge, authorized by War Dept., Washington, for changes in plans for bridge over Red River, changing length of spans.

La., New Orleans—Orleans Dredging Co., Inc., Canal Bank Bldg., applied to War Dept., Washington, for permission to build temporary bridge in connection with constructing seawall, Bayou St. John, Spanish Fort Park.

Md., Baltimore—City, Chas. F. Goob, Ch. Engr., probably take bids in 2 months on \$250,000 bridge, Broening Highway, over Colgate Creek; 405 ft. long, bascule with 70-ft. clearance, 40-ft. drive, 2 sidewalks, about 6 ft. wide, asphalt paving, 8 spans, 33 ft. long, approx. 500 or 600 ft. bulkheads; plans approved by War Dept., Washington; J. E. Greiner Co., Engr., 1201 St. Paul St. 2-19

Md., Baltimore—City, Elmer E. Hammond, Harbor Engr., requested Bd. of Estimates to appoint J. E. Greiner Co., 1201 St. Paul St., for inspection of Hanover St. bridge and statement on repairs.

Miss., Gloster—Amite County Supvrs., E. G. Nelson, Clk., opens bids Apr. 6 for 3 bridges.

North Carolina—State Highway Comsn. has low bids for 7 bridge projects. See Roads, Streets and Paving.

Virginia—State Dept. of Highways receives bids Mar. 31 for 3 bridges. See Roads, Streets and Paving.

Contracts Awarded

Mississippi—See Roads, Streets and Paving.

Va., Grundy—Norfolk & Western Ry. Co.,

W. P. Wislee, Ch. Engr., Roanoke, let contract to Roanoke Bridge Works, Roanoke, for 125 tons steel for bridge.

Canning and Packing Plants

Fla., Cocoa—Indian River Exchange Canneries, Inc., subsidiary of Indian River Sub-Exchange of Florida Citrus Exchange, reported, leased Van Ness canning plant; will operate; will be known as Indian River Exchange Canneries, No. 2.

Md., Easton—The Whitman Packing Co. and Sherwood Packing Co., reported, plans rebuilding burned plant.

Tenn., Winchester—M. Schield & Sons, Dayton, reported, acquired site, erect canning plant.

Cotton Compresses and Gins

La., Lake Charles—Lake Charles Compress and Warehouse Co., Inc., Hutchins St., reported, received low bid from Knapp & East, Kaufman Bldg., Lake Charles, and J. B. Townsend, Post Dispatch Bldg., Houston, Tex., for construction of 4 cotton warehouse buildings; Robt. J. Cummins, Bankers Mortgage Bldg., Houston, Tex., Conslt. Engr. 1-15

Tex., Elm Mott—Elm Mott Gin Co., incorporated; J. D. Long, Adair Long.

Tex., Houston—A. C. Muller & Co., Inc., capital \$200,000, incorporated; E. F. Kalb, 14115 Rosalie St.

Tex., Otto—Gill-Reed Co., Inc., capital \$17,000, incorporated; George A. Gill, Frank A. Reed.

Drainage, Dredging and Irrigation

Ala., Montgomery—U. S. Engr. Office opens bids Mar. 31 for dredging channel from Pensacola Bay through Big Lagoon, thence across a neck of land separating Big Lagoon from Old River, thence to mouth of Portage Creek, 783,000 cu. yd., place measurement.

Florida—U. S. Engr. Office, Jacksonville, advises regarding project for Caloosahatchee River and Lake Okeechobee Drainage Areas, work will probably be undertaken in 1931; will be construction of approx. 6 mi. levee and navigation canal along south shore of Lake Okeechobee and construction of number of drainage structures along St. Lucie Canal; completion of plans pending completion of location and field surveys; opens bids Apr. 3 for dredging approx. 175,000 cu. yd. Caloosahatchee-Lake Okeechobee Canal, near east end of Hiopochee and Lock 3, near Fort Thompson.

Louisiana—Bd. of Levee Comms. of Orleans Levee Dist. let contract to Thomas Carey, Pan-American Bldg., New Orleans, at 15.99 cents per cu. yd., for drainage canal, Orleans Canal to Esplanade Ave., approx. 12,000 cu. yd. excavation.

Louisiana—See Miscellaneous Construction.

Miss., Fulton—Edwin C. Finley, Engr., Tupelo, opens bids Mar. 31 for West Tombigbee Drainage Canal, approx. 260,000 cu. yd.

Tex., Waco—City, John Strange, City Engr., and McLennan County, Manton Hannah, County Engr., soon let contract for 3-mi. drainage ditch south of new state highway; 10 ft. deep, 20 to 30 ft. wide at bottom.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ala., Huntsville—Virginia Bridge & Iron Co., Roanoke, Va., reported, has contract for 85 tons of steel for garage and warehouse for Alabama Power Co., Birmingham.

Ala., Waterloo—City, Mayor Nolen, applied to Alabama Public Service Comsn., Montgomery, for permission to have power plant installed by Arthur R. Nesbit; will have hearing March 20.

D. C., Washington—Office of Archt. of Capitol receives bids April 9 for steam distribution system to be installed from Capitol power plant, E St. between New Jersey Ave. and South Capitol St., S. E., to certain Government buildings adjacent to Capitol. See Want Section—Bids Asked.

D. C., Washington—U. S. Grant, 3rd, Director of Public Bldgs., and Public Parks, D. H. Gillette, Chief, Engineering Division, having drawings and specifications prepared for central heating plant for public buildings and public parks; steel columns and roof trusses; conc. walls, roof and floor; 180x91x46 ft. high; 1 story; conc. pile foundation; cost of building, \$200,000 of equipment, \$500,000; bids will be opened about May 1.

Mo., Gainesville—Utility & Power Co., Chicago, Ill., reported, plans development hydro-electric project in Ozarks about 10 miles north of Althea Springs on Big North Fork River; has secured option on practically all land; Joe V. Pitts, Ava, Atty. 6-5

N. C., Asheville—Independent Power and Light Co., applying for light and power franchise, if franchise is obtained company plans extensive program of improvements on holdings on French Broad River at Alexander; Robt. S. Brown, C. E., also interested.

N. C., Elizabeth City—Virginia Electric & Power Co., Richmond, Va., reported, invited to submit proposals for city electric light and power franchise.

Oklahoma—Oklahoma Gas and Electric Co., Oklahoma City, advises will be no construction activities in connection with recent purchase of group of small electric properties. 3-12

Okl., McAllister—Senate Committee, Oklahoma City, reported, approved appropriation of \$20,000 to construct power plant addition and add a generating unit at State Penitentiary; B. F. Van Dyke, Warden.

Tenn., Columbia—Tennessee Electric Power Co., Chattanooga, will rebuild electric distribution lines in Columbia; cost \$40,000.

Tex., Edinburg—Central Power and Light Co., San Antonio, reported, let contract to Southwest L. E. Myers Co., Allen Bldg., Dallas, for 70 mile transmission line between Edinburg and Falfurrias; cost \$52,000. 2-12

Va., Langley Field, Hampton—S. J. Watson, Jr., Hampton, has contract for electric distributing system for service to 30 double N. C. O. quarters. 3-5

Flour, Feed and Meal Mills

Ark., Stuttgart—J. L. Green, Stuttgart, and R. L. Stigler, 117 W. Second St., Little Rock, reported, plans construction of mixed feed plant.

Fla., Jacksonville—Florida Feed Milling Co., incorporated; D. B. Vincent, 244 Phelps St.

Foundry and Machine Plants

Mo., Springfield—Reynolds Mfg. Co., F. A. Meyer, Sec., Phelps and Boulevard, reported, plans installing equipment to make aluminum castings.

Mo., St. Louis—Iron Fireman of St. Louis, Inc., capital \$20,000, incorporated; Jules Q. Strong, 506 Olive St.; manufacture automatic coal burners.

Tex., Fort Worth—Quisile & Andrews, 2212 Co., Iowa, Kans., reported, establish branch plant for manufacture of oil-well machinery.

Tex., Houston—Houston Foundry & Machine Co., capital \$300,000, incorporated; A. J. Binz, Binz Bldg.

Garages and Filling Stations

Fla., Daytona Beach—Halifax Motor Co., Inc., 408 N. Beach St., increased capital \$25,000 to \$40,000.

Fla., Orlando—T. K. Johnson, Inc., chartered; W. B. Parks, Orlando Bank & Trust Bldg.

Fla., St. Augustine—Miller's Garage and Transfer Co., incorporated; J. O. Miller, 246 Charlotte St.

Ky., Lawrenceburg—Lawrenceburg Motor Co., incorporated; Henry Powell, W. M. Underwood.

La., New Orleans—Following contractors estimating on filling station building Cor. St. Joseph and Carondelet Sts., for Pan-American Petroleum Corp., 839 Canal Bank Bldg., bids opened March 20: J. A. Petty & Sons, Inc., Audubon Bldg.; Gervais F. Favrot, Balter Bldg.; Wm. H. Dudley, Stern Bldg.; H. A. Pallfelt, Balter Bldg.; Wm. Wallace, Pere Marquette Bldg.; Wilfred Evers, 1310 Poland St., and Geo. J. Lupo, 2231 Milan St. 3-5

Md., Baltimore—Following contractors estimating on filling station Garrison Ave. and Reisterstown Rd., for American Oil Co., American Bldg., bids opened March 24: C. W. Littleton & Son, 4313 Liberty Heights Ave.; M. A. Long Co., 10 W. Chase St.; Consolidated Engineering Co., 20 E. Franklin St.; Lacchi Construction Co., Munsey Bldg.; Fred Kellar & Son, 77 E. Echodale Ave.; Thomas F. Leonard, 3615 Brehms Lane.

Md., Baltimore—City Real Estate Co., 11 E. Fayette St., will construct 50 conc. block garages 3100 Belmont Ave.; 1 story; 10x18 ft. each; George Wessel, Archt., 601 W. Fortieth St.

Md., Bel Air—Bel-Air Motor Co., Inc., chartered; Wm. B. Reed, Alan Wood, 3rd.

Md., Baltimore—Baltimore-Drive-It-Yourself Co., Inc., chartered; Willard R. Sanders, 1003 Bonaparte Ave.

Mo., St. Louis—Weber-Deibel Motor Co., capital \$25,000, incorporated; John A. Weber, 128 Rockhill Rd., Webster Grove; Ralph W. Hunter, 1717 Thurman St.

N. C., Charlotte—Folger Motor Co., capital \$100,000, incorporated; Lee A. Folger, 1002 E. Morehead St.; C. A. Cochran.

Tenn., Memphis—Chickasaw Tire Co., 691 Union St., incorporated; Henry E. Lewis, 758 Beade St.

Tex., Brownsville—South Texas Tire Co., capital \$25,000, incorporated; L. W. Baker, C. E. Cannon.

Tex., Fort Worth—Quisile & Andrews, 2212 W. Seventh St., reported, has contract for master service station Fourth and Burnett Sts., for Bill Townsend Tire Co., 501 Taylor St.; brick and tile; 2 story; 110x112 ft.; cost \$32,000. 2-19

Tex., Harlingen—Poal & Smith, reported, has contract for filling station Fillmore and Commerce Sts., for Henry Hunter, 222 W. Buchanan St.; cost \$15,000.

Tex., Haskell—Magnolia Petroleum Co., Magnolia Bldg., Dallas, reported, let contract to Dolinger & Graves, Cisco, for service station.

Tex., Laredo—Gateway Chevrolet Co., will occupy garage building to be erected S. W. Cor. Flores & Matamoros Sts., by Wm. Epstein, 310 E. Craig St., San Antonio; 2 story, rein. conc. and brick, 100x100 ft.; Guy M. Trout, Archt.

Tex., Port Arthur—Christy-Dolph & Collins Construction Co., 501 Procter St., Port Arthur, reported, has contract for construction service station Procter St. and Augusta Ave., for Firestone Tire & Rubber Co., Akron, O.; 1 story, brick and tile; cost \$25,000. 1-1

Tex., San Angelo—Magnolia Petroleum Co., Magnolia Bldg., Dallas, reported, acquired 7 local stations; plans erecting \$50,000 warehouse.

Tex., San Antonio—C. A. Weber, has contract for tire and filling station for Hillyer, Deutsch-Jarrett Co., Seventh and Dallas Sts.; brick and conc.; 70x150 ft. 3-12

Tex., Tyler—Tyler Super Service Co., Inc., chartered; Wm. I. Jenkins, Hugh Franklin Gill.

Gas and Oil Enterprises

D. C., Washington—Washington & Suburban Co., change of name from Seaboard Investment Co., formed as holding trust company to secure control of Washington Gas Light Co.; will issue \$6,500,000 5½ collateral trust gold bonds. 7-18

Fla., St. Petersburg—Pinellas Drilling Co., capital \$50,000, incorporated; W. W. Baker, 6935 Date Palm Ave.

Ky., Covington—United Natural Gas Co., capital \$250,000, incorporated; Clarence Rice, Henry J. Fedders.

Ky., Henderson—Valley Oil Co., incorporated; F. L. Moss, James P. Finn.

Ky., Louisville—Stoll Oil Refining Co., 227 W. Main St., reported, construct tunnel under River Rd. near Shelby St., as extension to company's pipe line from Hart County oil field into Louisville; double capacity of refining plant. 1-15

Ky., Scottsville—Finley N. Scott, 120 N. Lawndale Ave., Kansas City, Mo., reported, has gas franchise. 11-28

Ky., Springfield—Hayden-Aetna Oil Co., incorporated; Lawrence Walker, W. W. William.

Louisiana—Arkansas Natural Gas Co., Shreveport, subsidiary of Cities Service Co., 60 Wall St., N. Y., reported, will begin construction about March 25 on \$1,000,000 oil pipe line from east Texas fields to Shreveport; bids on construction of 70-mile line opened March 19; connections will be made at Shreveport with other lines for delivery of crude oil to Gulf Coast and Eldorado and Smackover areas. 1-29

La., Shreveport—Atlas Pipe Line Co., Inc., chartered; E. R. Ratcliff, Pres., Giddens-Lane Bldg.; construct 8-in. line from Shreveport to Longview, Tex.; erect pumping station, etc.

Missouri—See Oklahoma.

Oklahoma—Western Service Corp., Braniff Bldg., Oklahoma City, will construct 110 miles gas pipe line and 8 city distribution systems in Western Missouri, Butler, Eldorado, Amoret, Appleton City, Deepwater, Montrose, Adrian and Rockville, Minco, Tuttle, Amber and Pocasset, Okla.; franchise in Guthrie, Okla., to be voted on March 23; bids for pipe opened March 16; later will let equipment contracts. 2-12

Okl., Boise City—Cimarron Utilities Co., Box 127, Guymon, will construct gas transmission line and distribution system; install mains, services, meters, regulators, etc.; contract for work and for equipment not let. 2-26

Okl., Oklahoma City—Pioneer Gas Co., J. A. Wright, Pres., 200 E. 11th St., applied for gas franchise; subject to vote April 7.

Okl., Poteau—American Indian Oil & Gas Co., plans improvements to gas lines.

Texas—Allhand & Davis, Inc., S. W. Life Bldg., Dallas, has contract for stringing pipe for Oklahoma Natural Gas Corp. in connection with 75-mile gas pipe line between San Angelo and Big Lake field; also has contract for 45-mile extension of line from Big Lake field to Girvin.

Texas—Texas Co., 135 E. 42nd St., New York, N. Y., reported, considering construction of pipe line to East Texas oil fields; making survey; proposed line will extend from Lathrop area north of Longview to Nacogdoches, connecting there with line to Port Neches and Port Arthur refineries; construct about 75 miles of trunk lines and number of gathering lines; cost \$1,000,000.

Tex., Amarillo—City, reported, signed contract with Huber Petroleum Co., subsidiary of J. M. Huber, Inc., 460 W. 34th St., New York, for delivery of gas at city limits; city to construct mains and build a distributing system; pipe supplied by Huber Co.

Tex., Dallas—Spandco Oil and Royalty Co., capital \$30,000, incorporated; J. Beren, 2409 Park Row St.

Tex., Dallas—Shell Petroleum Corp., Shell Bldg., St. Louis, Mo., reported, considering erection of refinery; may construct pipe line from East Texas to Dallas.

Tex., Houston—Humble Oil and Refining Co., Humble Bldg., reported, construct warehouse and distributing system on Buffalo Bayou, including central building to contain offices and warehouse; 70x101 ft., 2 story; 1 story, 70x70 ft. building for lubricating oil; 40x70 ft. warehouse; 70x96 ft. garage.

Tex., Longview—Weaver Crim Corp., capital \$200,000, incorporated; Joseph M. Weaver, J. W. Crim.

Tex., Mount Pleasant—Shoreline Oil Co., incorporated D. B. Short, M. C. Jaynes.

Tex., Refugio—Blanco Creek Oil Corp., increased capital \$35,000 to \$55,000.

Tex., Seguin—Dorst Oil Co., incorporated; H. H. Weinert, E. A. Weinert.

Tex., Yancey—Yancey Oil Development Co., capital \$15,000, incorporated; George Helligman, N. C. Johnson.

Va., Roanoke—Petroleum & Gas Production Corp., E. M. St. Clair, Pres., being organized for purpose of drilling land in West Virginia on which company has mineral lease. 3-12

W. Va., Parkersburg—Gulf Refining Co., Pittsburgh, Pa., applied for federal permit to construct floating dock in the Ohio River below mouth of Little Kanawha River, and install 3 oil pipe lines to transfer oil from barges.

W. Va., Warwood—Gulf Refining Co. appointed Charles C. Gellnass, as structural draftsman for construction of oil pipe lines and docks in Ohio River at North Warwood. 2-19

Ice and Cold-Storage Plants

Ky., Harlan—Harlan Ice & Refrigerating Co. increased capital \$150,000 to \$200,000.

Mississippi—P. N. Blewer, 1300 Poplar Blvd., Jackson, reported, interested in formation of utility company to operate in Mississippi, Louisiana and other Southern states; plans erection of 30-ton raw water ice plant in Jackson and 24-ton raw water ice plant at McComb; will erect 4 plants in Mississippi; construction to begin at once; later plans erection of cold storage plants.

Mo., St. Louis—Universal Refrigeration Co., incorporated; Adolph Braun, 4226 Lafayette St.

Mo., St. Louis—Artificial Ice Co., Carl E. Anderson, 4105 Prescott St., Dallas, Tex., remodeling 2 and 3 story buildings at 2410-12 Vine St.; expend \$150,000 for improvements and equipment; capacity of plant 100 tons daily. 2-5

Okla., Shawnee—E. A. Liebman, 1214 W. Eighteenth St., Oklahoma City, reported, plans raw water ice plant; cost \$90,000.

Tex., Longview—Morgan Utilities Co., Inc., begun construction of \$150,000 ice plant; 75x100 ft.; later plans erection \$25,000 ice cream dept.

Tex., Rio Grande City—R. A. O'Neill, 816 Alamo Natl. Bank Bldg., San Antonio, receiving bids for conc., brick and steel ice plant; Jno. M. Marriott, 503 National Bank Bldg., San Antonio, Archt.

Land Development

D. C., Washington—District, Clifford Lanham, Supt. Trees and Parking, plans planting 30 miles of trees; \$22,500 appropriation.

Fla., Jacksonville—Chalmers D. Horne, Delmar Hotel Co., plans development of subdivision, Atlantic Blvd.

Fla., Jacksonville—Consolidated Land Co., incorporated; R. V. Covington, Graham Bldg.

Ky., Paducah—T. A. Miller Land Co., incorporated; J. V. Potter, 2103 Jackson St.

Md., Baltimore—George P. Mueller & Son Co., Inc., 820 S. Conkling St., chartered; George P. Mueller, E. Louis Mueller.

N. C., Charlotte—City has plans by engineering department for development of 88 acres Statesville Ave., for West Elmwood Cemetery.

N. C., Kings Mountain—Senate voted to appropriate \$225,000 for development of Kings Mountain National Military Park.

Tex., New Braunfels—Landa Park of New Braunfels, Inc., chartered; E. F. Scholls, A. O. Babel.

Va., Norfolk—Ashben Holding Corp., incorporated; E. E. Bennett, 1349 W. Princess Anne Road.

Lumber Enterprises

Ala., Selma—C. M. Gooch Lumber Co., Inc., Mary Ave., Memphis, Tenn., reported, plans establishing branch plant.

Ark., Texarkana—National Lumber & Creosoting Co., reported, merged with Wood Preserving Corp., Pittsburgh, Pa.

Fla., Jacksonville—Bob Martin, Inc., chartered; R. P. Martin, 2528 Herschell St.

Ky., Somerset—Hurt Fish Lumber Co., incorporated; Edwin Hurt, John Fish.

La., Jonesville—Three Rivers Hardwood Lumber Co. rebuilding rough hardwood lumber mill, daily output 35,000 ft.; wood frame and conc. foundation; wood floor; compo. or galv. roof; install 8 ft. band mill; cost \$25,000; O'Brian & Yost, Engrs., Randolph Bldg., Memphis, Tenn.; construction by owners. 2-26

Mo., St. Louis—H. A. Stockmann Lumber Co., incorporated; H. A. Stockmann, 5504 Tennessee St.

Metal-Working Plants

Ky., Owensboro—Owensboro Sheet Metal Works, capital \$20,000, incorporated; H. W. Bennett, Wilbur Kelly.

Tex., Houston—Southwestern Can Co., 1207 Mary St., has plans complete by Joseph Finger, Archt., Democratic Bldg., for \$150,000 building in Neils Esperson industrial addition on Greenwood St.; will install \$50,000 machinery; 180x350 ft.; monolithic conc. and struc. steel; a 2 story section will cover 100x180 ft. and a third story, 50 ft. sq.; manufactures cans of all kinds; bids for plant will be opened March 26. 5-11

Mining

Ark., Cushman—Edward F. Goltra, La Salle Bldg., St. Louis, Mo., and Wilson Bradley, Deerwood, Minn., reported, interested in establishing plant to employ Bradley Process for working low grade ore.

Ga., Auraria—Topabri Co., Inc., 1816 E St., N. W., Washington, D. C., develop 400 acres; install motors, pumps and pulverizers.

La., Winfield—Louisiana Quarry Co., capital \$300,000, incorporated; Rutherford Snow Wilson, 314 Ridgway St., Little Rock, Ark.; Chauncey D. Nichols, 3900 N. McKinley St., Oklahoma City, Okla., reported, leased limestone property of Southern Mineral Co.; plans installing crushing plant and new quarry equipment.

La., Winfield—Stupp Brothers Bridge & Iron Works, 2326 Ave. G, St. Louis, Mo., reported, has contract for 300 tons fab. struc. steel for breaker house for salt mine Carey Malt Co., Hutchinson, Kans. 3-12

N. C., Lilesville—B. V. Hedrick Gravel and Sand Co. recently rebuilt its gravel washing plant near here and is planning to double its present daily capacity of 30 cars per day, in near future; system of storage of stock will be reorganized and rearranged by installing several 6 yd. clamshell derricks to increase storage capacity; have acquired Cliffland lands of more than 600 acres, increasing gravel acreage to more than 1200 acres; will install screens, Diesel power plants, derricks and other machinery. See Want Section—Machinery and Supplies.

Tex., Hearne—Hearne Sand & Gravel Co., Inc., capital \$30,000, chartered; Lyman W. Perkins, Alex W. Spence

Virginia—Vanadium Corp. of America, 120 Broadway, N. Y., reported, plans new issue of \$5,000,000, 5% stock to provide working capital and funds for further improvements on plant of Southern Mineral Products Co., a subsidiary. 2-12

Miscellaneous Construction

Arkansas—U. S. Engr. Office, P. O. Box 667, Vicksburg, Miss., has low bids for 3,015,000 cu. yd. earthwork, south bank of Arkansas River; Pendleton Enlargement, 155,000 cu. yd., R. A. Stevenson, Dumas, Ark.; Davis Lake Levee, 375,000 cu. yd., Park Bros. Construction Co., Clinton, Ia.; Bedford New Levee, 560,000 cu. yd., Canal Construction Co., McCall Bldg., Memphis, Tenn.; Medford New Levee, 560,000 cu. yd., W. E. Callahan Construction Co., Arcade Bldg., St. Louis, Mo.; Wm. McKennon Enlargement, 600,000 cu. yd., Yale and Regan Co. and Benson-Kaiser Co., both Merchants-Laclede Bldg., St. Louis.

D. C., Washington—Z. D. Grooves, E. Falls Church, Va., has contract for dairy and bottle washing plant addition for Percy D. Gibson, 415 Kansas Ave., N. W.; 22x78 ft.; brick and tile; slag roof; Ironite floor; R. C. Archer, Jr., 1759 U St., N. W., Washington, Archt. 3-5

D. C., Washington—Fine Arts Comsn. approved design submitted by Frederick H. Brook, Archt., for memorial shrine to soldier dead, to be constructed in District of Columbia.

Fla., Miami Beach—Bath Club of Miami Beach applied to U. S. Engr. Office, Jacksonville, for permission to construct sheet pile groynes to extend approx. 100 ft. into ocean, south of 63rd St.

Fla., Pensacola—Turner Construction Co., Brent Bldg., has contract for seawalls costing over \$50,000 at naval station.

Louisiana—Bd. of State Engrs., D. C. Daniel, Sec., New Orleans Court Bldg., New Orleans, La., opens bids Mar. 31 for Reid-Bedford Diversion Canal, Madison Parish, 6800 ft. long, 27,000 cu. yd.; Grand Bend New Levee, Rapides Parish, 1450 ft. long, 6.3 ft. high, 10,000 cu. yd.

Louisiana—Comms. of Lake Borgne Basin Levee Dist., New Orleans Court Bldg., New Orleans, let contract to Wills Construction Co., 6029 Clemens Ave., St. Louis, Mo., for Jackson back protection levee, St. Bernard Parish, 300,000 cu. yd. 2-12

La., Natchitoches—Bd. of Comms., 19th Louisiana Levee Dist., Natchitoches, L. A. McKnight, Sec., East Point, opens bids Apr. 1 for East Point New Levee, Red River, left bank, Red River Parish, just below East Point, approx. 5300 ft. long, 8.0 ft. high, approx. 55,000 cu. yd.; Alligator Bayou Dike, Red River, left bank, Red River Parish, in rear of East Point, 500 ft. long, 29.0, 3.5 and 17.0 ft. high, approx. 14,000 cu. yd.

Md., Catonsville, Baltimore—George R. Morris Organization, Morris Bldg., let contract to E. A. Cullings, 692 Gladstone Ave., for swimming pool; subcontract for conc. pool let to C. E. Hopps, 1533 Homestead St.; plumbing to Geo. H. Schaffer, 4017 Falls road; private plans. 2-26

Mississippi—U. S. Engr. Office, P. O. Box 667, Vicksburg, has low bids for 3,051,000 cu. yd. earthwork, east bank Mississippi River; Dannis Landing Enlargement and New Levee, 1,215,664 cu. yd., Powers Construction Co., Harvey Bldg., West Palm Beach, Fla.; Ashbrook to Tarpley Enlargement, 2,446,000 cu. yd., W. W. Gary, Vicksburg; Greenville Front Enlargement, 706,000, Yale & Reagan Co. and Benson-Kaiser Co., both Merchants-Laclede Bldg., St. Louis, Mo. 2-19

Mississippi—War Dept., Washington, allotted \$1,000,000 for repairs and maintenance of revetments on Mississippi River at Lake Bolivar, Miss., Hagaman, La., and general maintenance of revetments in Vicksburg districts.

Mo., Kansas City—Standard Steel Works, North Kansas City, has contract for elevator equipment for \$1,000,000 grain elevator of Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, including all bins, hoppers, tubes, piping, draw-off hoppers and spouts, car-loading spouts, distributing spouts, legging and heads, and requiring 600,000 lb. steel.

Mo., Kansas City—Missouri-Kansas-Texas R. R. Co., F. Ringer, Ch. Engr., has bids in for \$250,000, 1,000,000-bu. addition to present 2,225,000-bu. elevator.

N. C., Kitty Hawk—Following have subcontracts in connection with Wright Memorial monument, Kill Devil Hill: Granite, J. D. Sargent Co., Mt. Airy; building derrick, sheet piling, dock, barges, National Iron Works, 418 Water St., Norfolk, Va.; sheet piling and rein. bars, Jones & Laughlin Steel Corp., 165 Broadway, New York; Wills & Mafera Corp., Gen. Contr., 303 W. 42nd St.; Robert P. Rogers and Alfred E. Poor, Archts., 130 W. 42nd St., both New York. 1-8

Tenn., Chattanooga—U. S. Engr. Office let contract to Sprague & Honwood, Inc., Scranton, Pa., at \$18,500, for core drilling for dam sites, Tennessee River.

Tenn., Nashville—Mrs. Percy Warner, Harding Road, recently let contract to John Oman, Jr., Acklen Park, for gateway entrance and stone wall to Percy Warner Park; gateway 160 ft. wide, including 4 pylons 20 ft. high, with provisions for 2 18-ft. roadways for automobile traffic and 2 outer walkways; Dougherty, Wallace & Clemmons, Archts., Cotton States Bldg. 3-5

Tex., Amarillo—Burrus Panhandle Elevators, J. Perry Burrus, Pres., 2701 Alamo St., Dallas, let contract to J. S. McKnight, 108 Taylor St., for excavation for \$120,000, 1,000,000-bu. grain elevator; rein. conc.; owner builds; L. P. Wallace, Struc. Engr. 2-5

Tex., Orange—Southern Pacific Co. (in Texas and Louisiana), R. W. Barnes, Ch. Engr., Houston, let contract to A. F. Wilson, Orange, for \$35,000 wharf; 80 ft., conc., timber loading and unloading, 30 ft. wide.

Tex., Port Aransas—Aransas Harbor Corp., 150 Broadway, New York, recently formed with Gail Borden Munsill, Winsted, Conn., as head, reported, taking bids for bulkheads, loading facilities, warehouses, docks, Harbor Island. 6-26-30

Tex., Texas City—Chief of Engineers, U. S. Army, Washington, authorized constructing rubble mound on dike; U. S. Engr. Office, Galveston, soon take bids.

Va., Hampton Roads, Norfolk—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract to Merritt, Chapman & Williams, Inc., 833 Howard Ave., New Orleans, La., at \$569,700, for replacing Pier 7 and quarters for tug crews. 3-12

Miscellaneous Enterprises

D. C., Washington—Pringle Construction Co., 907 Fifteenth St., reported, has contract for laundry improvements 1330 Florida Ave., N. W., for Manhattan Laundry.

D. C., Washington—Schneider-Spliedt Co., 1416 F St., reported, has contract at \$87,000 for stores and sausage plant Eleventh & E Sts., S. W., for Witt & Mirman, 211 Seventh St., N. W.; 2 story and basement; 85x118 ft.; brick, steel and conc.; install steam heat; plumbing and 2 freight elevators.

D. C., Washington—Z. B. Groves, Falls Church, Va., reported, low bidder for dairy for Fred Hughes, Poolesville, Md., at 4115 Kansas Ave. 3-5

D. C., Washington—Dept. of Commerce, Bureau of Standards, George K. Burgess, Director, advises regarding construction work on National Hydraulic Laboratory, bids will be opened March 23 for building, no equipment will be included in contract for building proper but will be purchased on separate contract by the Bureau; within a week will have plans and specifications available for following equipment which is to be built into the

substructure of the building: (1) Lengths of welded steel pipe, including bends, 8 ft. and 3 ft. in diam.; (2) wall castings for sluice gates of various sizes from 16 in. sq. up to 8 ft. sq.; (3) cast iron expanders and flap valves for one 30-in., one 36-in. and one 42-in. pump. 3-12

Fla., National Gardens—Jersey Breeders Assn. of Illinois, B. T. Adkins, Pres., reported, plans \$250,000 Jersey cattle breeding farm and dairy plant; first unit to consist of \$10,000 milking and cow barn and two 100-ton silos; cost \$40,000.

Fla., Orlando—Orlando Laundries, Inc., incorporated; I. N. Burman, 29 Lucerne Circle.

Fla., Pensacola—Peerless Laundry Co., 116 Infendencia St., will install tanks and new laundry machinery in plant. 2-26

Fla., Pensacola—Polar Ice Cream and Creamery Co., incorporated; J. S. Hayes, 1100 N. Palafox St.

Fla., Tampa—Ritz Extract Mfg. Co. incorporated; F. J. Huff, 111 N. Blvd.

Fla., West Palm Beach—Palm Beach Medical Co., incorporated; P. C. Ronning, 105 S. Poinsettia St.

Ga., Atlanta—National Biscuit Co., reported, plans addition to plant Magnum and Elliott Sts.; expend \$500,000 for new buildings and equipment; additions will double bakery production capacity; shipping branch will be of brick, 3 story and basement, 250x80 ft.; mill type; bridges at 3rd floor level and tunnel in basement will connect present buildings with new structures; fourth story will be added to number 3 building of present bakery plant to provide for rearrangement of baking machinery and installation of number of new ovens; platforms extending entire length of present bakery and new building will give plant total track capacity of 10 cars.

Ga., Augusta—J. T. Mackey, Route No. 1, and Dr. J. E. Reese, Route No. 3, reported, interested in establishment of cheese plant, in North Augusta.

Ga., Macon—Birdsey Flour Mills, Sanford Birdsey, Pres., Ninth St., plans construction of plant on Poplar St.; 2-story; fireproof.

Ga., Tifton—Imperial Tobacco Co. plans improvements to stemmery and redrying plant.

Ky., Louisville—Bauer Candy Co. changed name from Jobauer Candy Co., 1268 Bardstown Road, increased capital, \$20,000 to \$35,000.

Ky., Louisville—DeMichael Baking Co., 618 S. First St., increased capital to \$15,000.

La., Baton Rouge—Weiss, Dreyfous & Seifert, Archts., Maison Bldg., New Orleans, receives bids March 31 for 2-story, rein. conc. and brick creamery plant on Plank Rd. for Louisiana Creamery, Inc.; contract for electrical work, cold storage equipment, mechanical equipment and elevators will be let separately.

La., New Orleans—Luffa Fiber Corp., Edward Ledecke, Pres., American Bank Bldg., reported, plans cultivating 50 acres of luffa vine in connection with plan to manufacture cloth, mats, fiber and other products from the vine; considering construction of plant.

Md., Baltimore—MAS Patent Bottle Corp., capital \$5,000,000, incorporated; Jesse T. Dowling, Munsey Bldg.; will contract with other firms for manufacture.

Md., Baltimore—East End Contracting Co., Inc., chartered; Milton G. Long, 4819 O'Donnell St.

Md., Baltimore—Campbell Metal Window Corp., Bush & Hamburg Sts., will erect shop extension, including office space; cost \$10,000; private plans.

Miss., Natchez—Tom Wilmoth, Camden, Ark., reported, low bidder at \$107,934 for match factory for Mississippi Match Co.; work includes factory building, 2 warehouse and 5 outbuildings; brick and steel, rein. conc. foundations, built-up comp. roof, conc. floors, electric wiring, N. W. Overstreet, Archt., Standard Life Bldg., Jackson.

Mo., Joplin—Vending Machine Co., incorporated; John A. Heller, Carthage.

Mo., Kansas City—O. V. Mast Funeral Home, Inc., chartered; O. V. Mast, 1915 E. 15th St.

Mo., Springfield—News and Leader acquired property S. W. Cor. Boonville and Chestnut Sts., including fireproof building formerly occupied by Oliver Motor Co. and adjoining residence; will remodel Oliver Bldg. and enlarge and install modern newspaper machinery; will erect paper warehouse in rear.

Mo., St. Louis—Nemo Cone Alamo Corp., capital \$50,000, incorporated; T. O. Hall, 6008 Waterman St.; manufacture ice cream and ice cream cones.

Mo., St. Louis—Lindburg Refrigerator Co., capital \$30,000, incorporated; Arthur R. Lindburg, 3556 Lindell Blvd.

Mo., St. Louis—Guild Publishers, Inc., 705 Olive St., chartered; M. E. Barrett, 4152 Lexington St.

Mo., St. Louis—St. Louis Tent & Awning Co., incorporated; G. A. Leinicke, John Friederick.

N. C., Charlotte—Swinson & Presson, Inc., 816 E. Seventh St., installing peanut machinery; Edible Nut Machine Co., 2535 W. Washington Blvd., Chicago, Ill., Machy. Contr. 3-5

S. C., Greenville—Southeastern Securities Co., capital \$500,000, incorporated; C. O. Milford, Southwestern Bldg.

Tenn., Memphis—Peggie Hale, Inc., 81 Main St., incorporated; Walter A. Searing, F. F. Kane; manufacture dresses.

Tex., Corsicana—Marks Advertising Co., incorporated; M. A. Spurgeon, Sydney Marks.

Tex., Dallas—Burnett Roofing Co., capital \$20,000, incorporated; George A. Levy, Construction Bldg.

Tex., Denison—Barahart Mercantile Co., plans erecting new peanut and pecan shelling plant.

Tex., Houston—Home Planners Co., incorporated; J. P. Lawrence, 1805 Missouri St.

Tex., Houston—Federal Warehouse Co., capital \$25,000, incorporated; C. S. Hackney, 1311 Castle Court.

Tex., Houston—Amco Candy Co., capital \$15,000, incorporated; G. M. Acker, 1234 Howard St.

Tex., Houston—Tyler Printing Co., incorporated; J. W. Hazard, 1810 Travis St.

Tex., Houston—American Construction Co., 410 Rusk Bldg., reported, has contract at \$11,000 for factory addition for Green & Green, 2000 Providence St.

Tex., Houston—Oil Center Tool Co., 924 Odille St., increased capital to \$60,000.

Tex., Houston—Heflin Rubber Co., incorporated; J. M. Heflin, 1825 Harvard St.

Tex., Houston—Sunset Road Development Co., incorporated; Don Hall, Union Natl. Bank Bldg.

Tex., Houston—Murphy Tool Co., incorporated; F. W. Lawton, 2624 Oakdale St.

Tex., Houston—Don Hall Const. Co., Union Natl. Bank Bldg., reported, has contract for canning plant for Texas Packing Co., 1119 Commerce St.; cost \$50,000.

Tex., Marshall—G. O. Smith has contract for addition to laundry on West Burleson and N. Lafayette Sts., for City Laundry Co., John Harter, Propr.; 35x90 ft.; 1 story; cost \$15,000; install machinery; John Carpenter, Archt.

Tex., Thrall—Probst, Inc., chartered; A. E. Probst, Emil Birkelbach; construction.

Tex., Wichita Falls—Wichita Falls Chemical Co., incorporated; Fred Reaser, 2209 Brown St.

Va., Bristol—Columbian Paper Co., Buena Vista, let contract to Fiske-Carter Construction Co., Greenville, S. C., for boiler house in connection with building improvements. 2-19

Va., Clarendon—Starlight Dry Cleaning & Dyeing Co., incorporated; Harry R. Thomas, Clarendon.

Va., Lynchburg—Lynchburg News and Advance let contract to John P. Prettyjohn & Co., 212 Eighth St., Lynchburg, for erection of building Ninth and Church Sts.; Walter Scott & Co., Plainfield, N. J., for press; Robt. M. Allen, Archt., 15 Va. Ave., South Roanoke. 3-12

Va., Richmond—Consolidation, reported, of Tabb, Brockenbrough and Ragland and W. W. Hardwicke, Walford & Co., under name of Tabb, Brockenbrough and Ragland, offices 1001 E. Main St.

Va., Richmond—American Paper Bag Co., Inc., 602 N. Seventh St., advises have acquired building formerly occupied by Republic Paper Products Corp., in Highland Park; purchased and are installing new equipment; manufacture Kraft grocers bags, flats, squares and self opening and millinery bags; daily output 600; in operation by April. 2-12

W. Va., Boncar—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has contract from Electro Metallurgical Co., 30 E. 42nd St., New York, for order amounting to approximately \$100,000 for six 5000 kv.-a. electrical transformers to supply power to electric furnaces, to be installed in plant now under construction; transformers weigh about 50 tons each and are over 13 ft. high, each containing 2500 gal. of special insulating oil; power to operate will be obtained from new hydro electric plant now being constructed on New River near Gauley Bridge, W. Va., by New Kanawha Power Co., a subsidiary of Union Carbide & Carbon Corp., where four 30,000 kv.-a. Westinghouse water wheel generators will be installed. 2-26

Motor Bus Lines and Terminals

D. C., Washington—Peninsular Transit Corp., reported, granted permission by Public Utilities Comsn. to operate within the District and to establish a terminal at Eighth St. and Pennsylvania Ave.

Okla., Tulsa—Southern Kansas Stage Lines, Wichita, Kans., D. E. Sauder, Pres., reported, leased site 140x150 ft., S. E. Cor. Bradley St. and Cheyenne Ave., for truck terminal; 100x150 ft.; with dock for loading and unloading; filling station with 3 underground tanks, with storage capacity of 12,000 gal.; Lee L. Shumway, Archt., Alexander Bldg.; Former Construction Co., Contrs., Ritz Bldg.

Railways

Md., Baltimore—Pennsylvania R. R., W. W. Atterbury, Pres., Philadelphia, Pa., reported, plans purchasing 240 electric locomotives, 150,000 tons steel and 60,000 lb. copper for use on electrification of lines between New York and Washington, D. C.; locomotives to cost approx. \$25,000,000, to be ordered from Western Electric Co., 195 Broadway, New York, and General Electric Co., Schenectady, N. Y. 2-26

Oklahoma—Missouri-Kansas-Texas R. R. Co., F. Ringer, Ch. Engr., St. Louis, Mo., plans 20-mi. extension to line of Beaver, Meade & Englewood R. R. Co., J. Achenbach, Pres., acquired as of Mar. 5, pending approval of Interstate Commerce Comsn., Washington; lines now 85 mi. in length will be extended westward from Eva to Keyes; to be completed by July 1; later extension to Des Moines, N. M., planned.

Tex., Vega—Chicago, Rock Island & Pacific Ry. Co., W. H. Petersen, Ch. Engr., Chicago, Ill., advises regarding proposed line in vicinity of Vega, no contract has been let and there is a question as to whether or not this line will be built in 1931. 10-30-30

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

ALABAMA—State Highway Dept., Woolsey Finnell, Director, Montgomery, has low bids for 11 roads and 2 bridge projects in following counties:

Baldwin—12.4 mi. paving, Bay Minette-Stapleton, Morgan-Hill Paving Co., Woodward Bldg., Birmingham, \$301,045; paving Roberts-dale-Nunez bridge project, Van Gordon Construction Co., Montgomery, \$357,504;

Butler—3.039 mi. grading, draining, S. A. Lacy Co., 924 Quintard St., Anniston, \$33,196; bridge, S. P. Cook Co., Fairmont, Ga., \$36,500;

Marion—6 mi. limerock asphalt on bitum. base, between Guin and Hamilton, Morgan Hill Paving Co., \$99,099;

Madison—Limestone—12.50 mi. limerock asphalt on bitum. base, Huntsville to Athens, Municipal Paving & Construction Co., Cotton States Bldg., Nashville, Tenn., \$224,887;

Colbert—10.932 mi. limerock asphalt on bitum. base, Municipal Paving & Construction Co., \$187,920; bridges, L. C. Britton, kegee, \$27,084; 10.70 mi. grading, draining, A. H. Singer, LaFayette, \$71,466;

Macon—7.371 mi. grading, draining near Tuskegee, Sutton Bros., Stahlman Bldg., Nashville, \$76,620; bridges, A. G. Hunt Tuskegee, \$27,984. 2-5

D. C., Washington—Comms., D. C., open bids Mar. 20 for grading streets, roads and alleys, 50,000 cu. yd.

D. C., Washington—Office of Arlington Memorial Bridge Comsn. opens bids Apr. 1 for 56,000 cu. yd. grading at Arlington Memorial bridge.

D. C., Washington—Park and Planning Comsn. has low bid from Long Tenney Co., 126 W. Washington St., Hagerstown, Md., for 1.2 mi. grading, Park Dr., Rock Creek Park.

Florida—State Road Dept., Robt. W. Bentley, Chmn., Tallahassee, opens bids Mar. 25 for 6.28 mi. grading, draining, Road 4, Broward County, Dania Canal to Dade County line; alternates on plain cement conc. pavement, 9:6:9 and plain cement conc. paving, 10:8:10, using local material in last type.

Florida—State Road Dept., Robert W. Bentley, Chmn., Tallahassee, opens bids Mar. 25 for 6.28 mi. grading, draining and alternates on conc. pavement 9-6-9, and plain cement conc. pavement 10-5-10, using local materials in last type, Road 4, Broward County, Dania Canal to Dade County line, FAP 78.

GEORGIA—State Highway Bd., J. W. Barnett, Chmn., Atlanta, opens bids Mar. 25 for 2 roads and 6 bridges:

Coffee—bridge, Douglas-Ocella road, over A. B. & C. R. R., SAP G-9-19-C, 21,000 lb. rein. steel, 46,100 lb. struc. steel, 7900 ft. b. m. treated timber, 1890 lin. ft. treated piles;

Pulaski—widening bridge, Hawkinsville-Eastman road, Bemry's Mill, FAP 113 Reop., 15,300 lb. rein. steel;

Effingham—4.8 mi. paving, 4 bridge culverts, Statesboro-Savannah road, near Bryan-Effingham County line to Effingham Chatham County line, FAP 207-B, 59,145 cu. yd. excavation, 67,166 lb. rein. steel, 56,911 sq. yd. conc. paving;

Putnam—8.2 mi. paving, Eatonton-Madison road, Eatonton to 8 mi. north, FAP 409-A Reop. and 477-A, 60,900 cu. yd. excavation, 98,800 sq. yd. conc. paving, 13,268 lin. ft. raised edge curb.

KENTUCKY—State Highway Comsn., H. D. Palmore, Engr., Frankfort, opens bids Apr. 15 for 4 roads and bridge in following counties:

Boyd—grading, draining, surfacing approach and side drives to bridge over Ohio River, Ashland, 12th St. beginning at Winchester Ave.;

Calloway—bridge over East Fork of Clarks River, 3 200-ft. rein. conc. deck girders, 4 45-ft. of same; 0.6 mi. grading, draining approaches, 2 mi. south of Murray, Murray-Hazel road;

Christian—4.6 mi. surfacing, Hopkinsville-Madisonville (Dixie Bee Line) road, end of black top surfacing approx. 3 mi. north of Crofton Lake to Hopkins County line near Mannington; 11.5 mi. grading, draining, same road, Hopkinsville to approx. 1 mi. south of Crofton.

KENTUCKY—State Highway Dept., H. D. Palmore, Engr., Frankfort, has low bids for 13 roads and 3 bridges in following counties:

Clinton—8.939 mi. grading, draining, Albany-Burkesville road, FA 119 A-G, S. T. Wright & Bro., Harlan, \$55,601;

Crittenden—7.723 mi. surfacing, Marion-Fords Ferry road, SP 10 DS, T. J. Atkins Co., New Albany, Ind., \$31,445; 8.829 mi. surfacing, Louisville-Paducah road, FA 91 AS, Blair & France Construction Co., Lexington;

Cumberland—8.048 mi. grading, draining, Burkesville-Albany road, FA 199 B-G, S. T. Wright & Bro., Harlan, \$142,084;

Edmonson—10.641 mi. surfacing, Leitchfield-Brownsville road, FA 209 AS, Campbell & Co., Bowling Green;

Floyd—10.944 mi. surfacing, Prestonburg-Pikeville road, FA 132 AS, Lewis & Kelly Construction Co., Harlan, \$209,530;

Franklin-Anderson—8.288 mi. grading, Frankfort-Lawrenceburg road, FA 226 AG, James C. Macht, Newport, \$100,054;

Gallatin—66.660 mi. surfacing, Warsaw-Carrollton road, FA 198 AS and 168 FS, Bowyer & Johnson, Henderson, Tenn., \$122,683;

Hancock-Breckinridge—9.559 mi., Bowyer & Johnson, \$154,527;

Jefferson—bridge and approaches over Long Run Creek, FA 117 CB, O. V. Arnett, Berea;

Letcher—bridge and approaches over Colly Creek, Ermine, FA 127 HB, O. V. Arnett, Berea, \$10,892; bridge and approaches over Sand Lick Creek, Marlowe, Hart Construction Co., Whitesburg, \$8002; 4.079 mi. surfacing, Jenkins-Pikeville road, FA 127, FS2 and SP 6 HS2, J. M. Perkins Co., Frankfort, \$56,056;

Todd—41.475 mi. grading, draining, Russellville-Guthrie road, FA 202 A-G, Lebanon Bridge Co., Gallatin, Tenn.;

Trimble-Carroll—10.352 mi. surfacing, Bedford-Carrollton road, FA 197 AS and SP 13 DS, Gorrell, Barrow & Kirkpatrick, Russellville, \$192,478;

Union—9.643 mi. surfacing, Louisville-Paducah road, FA 62 AS and SP 8 FS, N. E. Stone, Madisonville, \$159,629;

Webster—13.880 mi. surfacing, Madisonville-Henderson road, FA 34 ACD2-S, Gorrell, Barrow & Kirkpatrick, Russellville, \$240,420. 2-5

La., Ferriday—City, P. H. Corbett, Mayor, plans paving several streets.

MARYLAND—State Roads Comsn., L. H. Steuart, Sec., Baltimore, opens bids Mar. 24 for 6 roads:

Baltimore City—0.74 mi. sheet asphalt, Russell St., Maryland Ave. to Bush St., BC-102-74; 0.6 mi. conc. shoulders, Washington Blvd., Letitia Ave. to southern city limits, BC-100-74;

Baltimore County—2.99 mi. (alternates on resurfacing with rock asphalt and bitum.

conc), Liberty road, North Branch to Harri-sonville, FAP 223, B-189-711;

Caroline County—2.0 mi. conc., Denton to-ward Tuckahoe, Co-65-24;

Dorchester County—1.70 mi. conc., Mount Holly (end of D-51) to Airy, D-75-14;

Prince George's County—1.0 mi. conc., Old Powder Factory road, end of P-95 toward Beltsville, P-162-32.

Maryland—State Roads Comsn., L. H. Steuart, Sec., Baltimore, has low bids for oil-ing roads; 44.48 mi., Dist. 1 and 2, 99,159 gal., Cooper Corp., Salisbury, .0759 per gal.; 41.15 mi., Dist. 3 and 7, 98,997 gal., Southern Asphalt Co., North Blvd. and Ellen Road, Richmond, Va., .0729 per gal.; 146.35 mi., Dist. 3A and 8, 645,261 gal., Edward P. Pendleton, 16 S. Calverton Road, Baltimore, .112 per gal.; 31.38 mi., Dist. 4, 72,807 gal., At-lantic Refining Co., 260 S. Broad St., Phila-delphia, Pa., .0724 per gal.; 36.10 mi., Dist. 5, 91,565 gal., Lansdale Co., Hackensack, N. Y., .0725 per gal.; 39.35 mi., Dist. 6, 093,386 gal., Southern Asphalt Co., .0812 per gal. 2-26

MARYLAND—State Roads Comsn., L. H. Steuart, Sec., Baltimore, has low bids for 3 roads and 2 bridges in following counties:

Cecil—steel and conc. bridge over B. & O. R. R., Aikin, Co-97-23, Glenside Construc-tion Co., Reading, Pa., \$70,028;

Prince George's—double span arch bridge over Paint Branch, Jefferson Ave., Riverdale, G. A. & F. M. Wagman, Dallastown, Pa., \$16,838; 1.75 mi. gravel, Clinton to Piscata-way road, P-52-34, L. R. Curbert, Freder-icksburg, Va., \$8387;

Queen Anne's—1.0 mi. conc., Price-Roe road, Co-66-24, P. D. Phillips & Bros., Salis-bury, \$24,184;

Worcester—1.0 mi. conc., Pocomoke-Cedar Hall road, Wo-98-14, P. D. Phillips & Bros., \$20,844. 3-5

Md., Baltimore—City, Nathan L. Smith, Highways Engr., has low bids for streets: Contr. 586, 10,200 sq. yd. cement conc., Phil-ipp E. Rawlings, 2400 Aisquith St., \$19,865; Cont. 587, 10,800 sq. yd. sheet asphalt, Balti-more Asphalt Block & Tile Co., 1320 N. Mon-roee St., \$44,999. 3-5

Md., Baltimore—City, Nathan L. Smith, Highways Engr., opens bids Mar. 25 for street work: Cement Concrete Contr. 590, 1100 sq. yd.; Sheet Asphalt Contr. 591, 8000 sq. yd.

Md., Ellicott City—Howard County Com-mrs. soon take bids on materials and road repairs; Charles Wallich, Road Engr.

Md., Sharpsburg—War Dept., Headquar-ters Third Corps Area, Office of Quartermas-ter, 311 St. Paul Pl., Baltimore, opens bids Mar. 28 for reconstructing avenues, Antietam Battlefield. 3-12

Miss., Vicksburg—Vicksburg Military Park, J. B. Holt, Supt., opens bids March 27 for paving arch to Illinois monument; allotment of \$30,000 approved. 3-5

Mo., St. Louis—City, Bd. of Public Ser-vice, City Hall, opens bids Mar. 31 for im-proving Macklin Ave., Finkman St. to Loughborough Ave., and for foundations and rein. conc. piers, abutments and retaining walls, and for steel for East St. Louis Union Station approach to St. Louis Municipal bridge in East St. Louis.

NORTH CAROLINA—State Highway Comsn., John D. Waldrop, Engr., Raleigh, has low bids totaling \$2,285,614 on 17 roads and 7 bridge projects in following counties:

Edgecomb—5.14 mi. dirt road, Route 95, No. 1251, Gregory Chandler Co., Inc., Vir-gilina, Va., \$23,517;

Nash—bridge over Tar River west of Rocky Mount, Route 40, No. 1630, J. S. Bowers, Whiteville, \$30,074; bridge over Tar River, Rocky Mount, Route 40, No. 1643, Kiker & Yount, Gilmer St., Reidsville, \$35,918;

Pasquotank—10.47 mi. hard surface, Route 34, R. G. Lassiter & Co., Raleigh Bank & Trust Co., Raleigh, \$196,562;

Lenoir—13.25 mi. widening, hard surface, Route 10, No. 2560, R. G. Lassiter & Co., \$196,562;

Brunswick—9.44 mi. hard surface, Route 30, No. 3201, R. G. Lassiter & Co., \$140,273;

Onslow—15.08 mi. paving, Route 30, No. 3670, Blythe Bros. Co., Inc., Brevard Court, Charlotte, \$134,640;

Robeson—5.46 mi. dirt road, Route 241, No. 241, No. 3551, Hanford Bros., Burlington, \$30,996;

Harnet—9.66 mi., Route 21, No. 4434, Cor-nell-Young Co., Ga. Casualty Bldg., Macon, Ga., \$169,449; structures, J. S. Bowers, \$8149;

Lee—6.07 mi. hard surface, Route 50, N. 4460, Guilford Construction Co., Greensboro, \$126,623;

Alamance—3.31 mi. hard surface, Route 10, No. 5070, Murray Construction Co., North St., Greensboro, \$77,072;

Anson—6.55 mi. hard surface, No. 6070, W. F. Bowe, Jr., Greensboro, \$77,072;

Montgomery-Randolph—7.65 mi. conc., Route 70, No. 5551, Cornell-Young Co., \$131,-274;

Rowan—7.0 mi. paving, Route 150, No. 6694, R. G. Lassiter & Co., \$131,219; struc-tures, Sherrill & Lee, Winston-Salem, \$17,-375;

Scotland—2.25 mi. dirt road, Route 241, No. 6815, C. E. Hill, Oakboro, \$7725;

Yadkin—7.99 mi. dirt road, Route 67, No. 796, Jamison Bros., Inc., Cotton States Bldg., Nashville, Tenn., \$81,051; structures, Elliott Building Co., Hickory, \$46,841; bridge, Route 67, over Yadkin River, Elkin, No. 7960, E. A. Wood & Co., Andrews, \$162,905; 15.62 mi. dirt road, Route 67, No. 7961, Jamison Bros., \$122,105; structures, Hobbs Construction Co., Builders Bldg., Charlotte, \$29,642;

McDowell—7.94 mi. hard surface, Route 10, No. 5451, Murray Construction Co., Greens-boro, \$157,043;

Rutherford—1.05 mi. hard surface, Route 20, No. 8761, Wilson Construction Co., Tech-nical Bldg., Asheville, \$21,159;

Buncombe—3.94 mi. hard surface, Route 20, No. 9061, Murray Construction Co., \$116,135; structures, Homerton & Hageman, Asheville, \$10,572;

Swain—5.44 mi. dirt road, Route 107, No. 9811, Dicus Bros., Waynesville, \$23,959.

TEXAS—State Highway Comsn., Glibb Gil-christ, Highway Engr., Austin, drawing plans for 19 roads in following counties:

Hemphill—7.590 mi. grading, draining, Highway 4 and through Canadian to north city limits, FAP 45-C, Rev., \$69,600;

Jones—3.96 mi. grading, draining, conc. paving, Highway 30, Hemphill to station 20 plus 92.3, FAP 603-B, \$10,300;

Ochiltree—6.747 mi. grading, draining, Highway 4, Oklahoma state line to Perry-ton, FAP 758-A, \$12,000;

Parker—18.830 mi. 6-in. compacted crushed conglomerate stone base course and 5-in. loose crushed stone base course for Units 2 and 2½-in. bitum. macad. surface course, 22 ft. wide, Highway 34, Tarrant Co. line to Wise County line, SAP S59-F, Units 2 and 3;

Waller—3.763 mi. rein. conc., Highway 6, Hempstead to east line Road Dist. 1, FAP 535-C, Unit 2, \$98,000;

Dewitt—double bitum. surface treatment on 5-in. compacted crusher on broken stone base course on 8-in. compacted gravel or cal-iche base course and conc., east line Road Dist. 7 through Yorktown to Smith Creek, SAP 735 B and D.

Victoria—14.600 mi. rein. conc., Highway 29, Dewitt County line to Victoria, FAP 508-A, Unit 2, \$325,000;

Gillespie—12.7 mi. grading, draining, High-way 81, north from Fredericksburg, \$10,000;

Harrison—7.9 mi. widening shoulders and ditches, Highway 8, north from Panola County line, \$53,000;

Gonzales—5.324 mi. 1-in. 2-course rock as-phalt on 3-in. crusher run broken stone and 10-8-in. volcanic ash base course, Highway 81, 5.55 mi. east of Smiley to Dewitt County line, FAP 44-E, Unit 2, \$73,000;

Guadalupe—7.306 mi. 1-in. 2-course lime-stone rock asphalt surface course on 9-6-9-in. conc. base with curb, Highway 3-A, 1.5 mi. east of Kingsbury to San Marcos River, FAP 521-B, Unit 2, \$160,000;

Coleman—11.477 mi. grading, draining, triple bitum. surface course on 4-in. com-pacted waterbound macad. surface course and 4-in. compacted crusher run broken stone base course, Highway 23, 3 mi. north of Coleman to Sta. 606 plus 00, FAP 610-A, \$250,000.

Cherokee—5.588 mi., Highway 40, Jackson-ville to Sta. 331 plus 72, FAP 566-A, Unit 1, \$50,000;

Fannin—3.620 mi., Highway 5, Bonham 3 mi. east, FAP 464-A, Unit 1;

Fort Bend—14.213 mi., Highway 36, Pleak School to Brazoria County line, FAP 889-B, Units 1 and 2;

Hemphill—9.393 mi., Highway 33, Roberts County line to intersection with Highway 4, FAP 625-C, Unit 1, \$70,000;

Henderson—7.781 mi., Highway 40, 3 mi. west of La Rue to 2 mi. west of Poyner, including several large bridges, FAP 556-F, Unit 1, \$132,000;

Hopkins—9.921 mi. grading, draining gravel surface course, Highway 11, Sulphur Springs to Como, FAP 501-C;

Potter—5.798 mi., Highway 5, Amarillo to Canadian River bridge, FAP 585-A, Unit 1, \$40,000.

Texas—State Highway Comsn., Glibb Gil-christ Engr., allotted approx. \$500,000 for improving and building approx. 250 mi. high-way in 48 county projects.

Tex., Houston—City, J. M. Nagle, City Engr., call for bids in 3 weeks for 2½ mi. paving Telephone road. 2-19

Tex., Houston—Gibraltar Construction Co., Post-Dispatch Bldg., asked City Council for

permission to improve with bituminous surface Rusk Ave., Hilosel St., Newman St. and Kingston St.; if authority is granted, work will be done under private contract.

Tex., Houston—City Council authorized Harry C. Hord, Jr., to lay 3-course bitum. surface, Yoakum Blvd., between Berthea and Bissonnet Ave., and for similar surface, Grant St., Westheimer road and Pacific Ave. and to pave Jackson Blvd. between Grant St. and Waugh drive with 3-course inverted penetration treatment; Hedges Co. authorized to lay 2-course black top pavement, W. Main St., between Day and Garrett Ave.

Tex., Spearman—See Contracts Awarded.

Tex., Taft—City plans paving; \$105,000 bond issue available; Montgomery & Ward, Conslt. Engr., Harvey-Snyder Bldg., Wichita Falls.

Virginia—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, call for bids within 60 days for work on Route 23, Christiansburg to Blacksburg; also plans eliminating crossing of Virginian Ry. at Kumis.

VIRGINIA—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, opens bids Mar. 31 for 6 roads and 3 bridges in following counties:

Russell—0.4 mi. macad. surface treatment, Clinch River to 1 mi. west of Clinch River, Routes 11 and 123, 11,678 cu. yd. excavation, 3476 sq. yd. macad., 3476 sq. yd. surface treatment; bridge over 20 ft. over Clinch River, 60,500 lb. rein. steel, 219,000 lb. struc. steel, F177DB1;

Spottsylvania—3.95 mi. conc., 3.9 mi. ml. south of Fredericksburg to Fredericksburg, Route 31, 4952 cu. yd. excavation, 26,340 sq. yd. conc., F205AWF225BW;

Princess Anne—4.4 mi. rock asphalt, 0.6 mi. east of Fort Story to Lynnhaven Inlet, 8000 cu. yd. excavation, 51,865 sq. yd. rock asphalt, 18,909 cu. yd. conc., F463G;

Fluvanna—1 mi. soil 8 mi. south of Louisa County line to Cunningham Creek, 42,585 cu. yd. excavation, 3146 cu. yd. soil, 3146 cu. yd. surface treatment, F493E;

Wythe—1.2 mi. macad. surface treatment, 2 mi. west of Wytheville to 3.2 mi. west of Wytheville, Route 10, 37,880 cu. yd. excavation, 3252 lb. rein. steel, 13,517 sq. yd. macad., 13,517 sq. yd. surface treatment; bridge over 20 ft. over Reed Creek, 42,300 lb. rein. steel, 225,000 lb. struc. steel, F698AB1;

Caroline—0.5 mi. gravel, 0.2 mi. east of Goldenvale Creek, 0.3 mi. west of Goldenvale Creek, Route 38, 5862 cu. yd. excavation, 1594 sq. yd. gravel, 1594 sq. yd. surface treatment; bridge over 20 ft. over Goldenvale Creek, 11,340 lb. rein. steel, 1560 lin. ft. piling, F705AB.

Va., Fort Monroe—Corps Area Engr., 311 St. Paul Pl., Baltimore, Md., opens bids Mar. 31 for 9 ft. 9-in. rein. conc. road, Crisp Park to vicinity or anti-aircraft batteries.

West Virginia—State Road Comsn., Geo. E. White, Sec., Charleston, opens bids Mar. 24 for 3.6 mi. grading, draining, National Forest road, Pendleton County, Proj. 3496.

Contracts Awarded

FLORIDA—State Road Dept., Robt. W. Bentley, Chmn., Tallahassee, let contracts for 3 roads in following counties:

Putnam-Flagler—11.16 mi. grading, draining, Road 28, FAP 72-A, Murphy Construction Co., Exchange Bldg., Orlando, \$84,260;

Flagler—11.79 mi. grading, draining, Road 28, FAP 72-C, Murphy Construction Co., \$119,478;

Putnam—14.91 mi. broken stone base surfacing, Road 28, Proj. 706-B, T. B. Gillespie, Inc., Palatka, \$161,958. 1-29

Fla., Pensacola—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract to Smith Engineering Co., Barnett Bldg., Jacksonville, for paving and draining at naval air station; \$150,000. 1-29

MISSISSIPPI—State Highway Comsn., Gus A. Draper, Engr., Jackson, let contracts for 2 roads and 4 bridges in following counties, totaling \$241,757:

Warren—bridge, U. S. 61, south of Vicksburg, Wooten & Tucker, Memphis, Tenn., and Vicksburg, \$75,578;

Panola—5.148 mi. road and 3 bridges, between Batesville and Sardis, U. S. 51, F. V. Ragsdale & Co., Derman Bldg., Memphis, Tenn., \$136,043; 2.156 mi., Batesville-Sardis road, U. S. 51, Mike Harvel, Oxford, \$30,135. 2-26

Tex., Spearman—City Comsn. let contract to Panhandle Construction Co., Lubbock, for 20 blocks paving; contracts for additional street paving will be let at later date.

Virginia—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, reported, transferred contract to K. L. Black & Co., Inc., 1314 Grayland Ave., Richmond, for 4 mi.

macad., Route 14, recently let to Norton Construction Co., Norton. 2-19

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.

Ark., Hot Springs—Judge J. A. Stallcup, Charles Birnbaum and Hamp Williams, Commrs., interested in formation of Improvement Dist. to build central sewage disposal plant to take care of sewage from Hot Springs National Park going into Lage Cathering and Hamilton; after district is formed and survey made will ask for bids for work, cost \$450,000. See Want Section—Machinery and Supplies. 2-19

D. C., Washington—Frank J. Rose, reported, has contract for service sewer, Wade Rd., and service sewer vicinity Meade St.

Ky., Fort Thomas—W. L. Halley & Co., 314 42nd Ave., N., Nashville, Tenn., has contract at \$23,760 for sewage disposal plant; install Imhoff tanks, circular filter, secondary tank, sludge beds, dosing apparatus and rotary distributor; C. H. Kuhn, City Engr. 2-19

Ky., Louisville—John J. Quinn Co., low bidder at \$78,027 for Deer Park sewer. 3-5

La., Natchitoches—City receives bids March 24 for extension of sewer line in Hedges Addition; work consists of 5700 ft. of 8-in. sewer pipe, manholes, etc.

Md., Baltimore—Marino Contg. Co., 305 N. Exeter St., has contract at \$16,112, for sewers, Sanitary Contr. No. 268. 3-12

Md., Cascade—See Water Works.

Miss., Union—Town receives bids April 7 for labor, material and complete construction of 2000 ft. of 12-in. sewer and 1000 ft. of open ditch; either conc. or vit. conc. pipe; W. B. Montgomery, Conslt. Engr., Henry Memorial Bldg., Jackson.

Mo., Joplin—City defeated \$275,000 sewer bonds. 2-26

Mo., Mexico—City votes at later date on \$75,000 bond issue. Moss M. Edwards, City Engr. 3-5

Tex., Houston—Allor & Adams, reported, low bidder at \$11,925 for sewers, Bowling Green and MacGregor Way.

Tex., Houston—Massengale & Sauer, reported, low bidders for drainage of Lyons Ave.

Tex., Houston—Russ Mitchell, Inc., Petroleum Bldg., reported, has contract for excavating for aerating tanks at North Side sewage disposal plant.

Tex., Houston—See Water Works.

Va., Langley Field, Hampton—W. C. Spratt, Fredericksburg, has contract for sewage disposal plant, Heavier-than-air Section. 3-5

Va., Richmond—Dept. of Public Works receives bids March 23 for supplying materials for sewer construction, including 400,000 brick, terra cotta sewer pipe in 6 and 24-in. diam.; conc. or vit. iron sewer castings.

Va., Roanoke—City, reported, soon begin work on 6 major sanitary sewer projects; soon call for bids.

Telephone Systems

Fla., Tampa—Peninsular Telephone Co., reported, plans expenditure of \$500,000 for construction work and installations in 1931.

Ky., Augusta—Kentucky Railroad Comsn. authorized Southern Bell Telephone Co., Atlanta, Ga., to make long-distance connection to Northern Kentucky Telephone Co.

Md., Baltimore—Aeronautical Radio, Inc., Washington, D. C., applied to Federal Radio Comsn., Washington, D. C., for construction permit for radio station WEEB, Baltimore airport.

Mo., St. Louis—Southwestern Bell Telephone Co., Telephone Bldg., reported, plans expenditure of \$32,000,000 in 1931; company furnishes telephone service in Missouri, Arkansas, Kansas, Oklahoma and Texas.

N. C., Asheville—WWNC Radio Station, reported, plans moving transmitter and antenna to site on Beaucatcher Mountain; applied for lease of 50 acres.

Virginia—South East Public Service Corp. of Virginia, Charlottesville, L. Densmore, Gen. Mgr., and South East Public Service Co., which companies have acquired 52 telephone

exchanges in Virginia, West Virginia and North Carolina, will not undertake any heavy building or construction at this time; later however will do some telephone construction work. 5-12

Va., Roseland—G. H. Parr Telephone Co., Inc., chartered; G. H. Parr.

W. Va., Welch—American Electric Co., 6401 S. State St., Chicago, Ill., reported, applied for 30-yr. franchise; build telephone line from Iaeger to Bishop, connect War, Iaeger, and Berwind with an extension later to Bishop and possibly to Buchanan County, Va.

W. Va., Weston—J. Roy Watkin and A. G. Hudkins, both Weston, reported, acquired Lewisburg-Upshur and Harrison-Doddridge telephone plants.

Textile Mills

Ga., Austell—Campbell Coal Co., 238 Marietta St., N. W., Atlanta, reported, has contract for 100 tons conc. bars for mill buildings for Clark Thread Co., Newark, N. J.; A. K. Adams & Co., 542 Plum St., N. W., Gen. Contr. 2-19

Ga., Hogansville—United States Rubber Co., 1790 Broadway, New York, F. B. Davis, Pres., will take over and operate the Stark Mills of Hogansville, a 35,000 spindle unit in the Callaway group of cotton mills; manufacture cotton cords for tires.

N. C., Asheville—Asheville Hosiery Mill, Deaverview Road, W. Asheville, receiving bids, date not set, for 2 story, conc. foundation, steel, hosiery mill; cost \$90,000; following contractors estimating: John M. Geary Co., Arcade Bldg.; L. L. Merchant Constr. Co., 290 Biltmore Ave.; L. Riddle, 85 Olney Rd.; and E. J. Tyler, 25 Clinton St., all of Asheville. 2-26

Va., Norfolk—Norfolk Weavers, Inc., Louis Maisel, Pres., 377 Fourth Ave., New York, reported, leased building, Forty-first St. and Killiam Ave., Lamberts Point; weave silk cloth and rayon cloth.

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.

Ark., Hot Springs—Pittsburgh-Des Moines Steel Co., Des Moines, Iowa, low bidder at \$5700 for furnishing labor and material and constructing 20 ft. x 36 ft. high steel water tank with foundation, floating top, internal piping and pipe connections, with existing water mains; J. K. Leroy, 1107 Central St., Hot Springs, low bidder for furnishing labor and material and performing all work for construction of water cooling and water storage system at Hot Springs National Park.

D. C., Washington—Dist. Commrs., receive bids March 23 for constructing 282 ft. of 30-in. 3755 ft. of 36-in. and 2450 ft. of 48-in. water main. See Want Section—Bids Asked.

Ky., Columbia—City, reported, let contract to Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., for complete water works system; cost \$56,000.

Md., Baltimore—Dante Construction Co., 318 S. Eden St., low bidder at \$54,634 for sewers, Sanitary Contr. 274.

Md., Baltimore—Anchor Post Fence Co., Eastern Ave. and Kane St., low bidder at \$15,661 for iron fence around Druid Hill Lake. 3-5

Md., Baltimore—Arundel Corp., Pier 2, Pratt St., has contract for sand for Prettyboy Dam; Chapman Valve Mfg. Co., 1019 Arch St., Philadelphia, Pa., contract for sluice gates; J. A. LaPorte Corp., 108 State St., Albany, N. Y., Gen. Contr.; Charles Brown Cornell, Youngstown, O., Constr. Engr. 10-9

Md., Cascade—War Dept., Washington, approved extension of water and sewer systems for National Guard Camp at Camp Albert C. Ritchie; cost \$14,757.

Md., Cumberland—City will have plans ready for bids about April 1 on dam for water supply; J. E. Griener Co., Engr., 1201 St. Paul St., Baltimore.

Md., Frederick—City will have plans ready for bids about April 15 for dam for water supply; conc. 500 ft. long and 50 ft. high; cost \$200,000; Elmer St. C. Maxwell, Engr. 3-19

Md., Myersville—Town will probably vote in May on issuance of \$40,000 bonds for water works. 3-5

Mo., Princess Anne—City, reported, plans purchase of pumping unit of 1000 gal. per min. capacity, and other equipment for water works.

Mo., St. Louis—City expend \$25,000 for installation of water meters.

N. C., Jonesboro—Town install deep well pump; Spoon & Lewis, Engrs., Jefferson Bldg., Greensboro. See Want Section—Machinery and Supplies.

Okla., Ponca City—City, reported, voted \$38,000 main extension bonds; C. F. Hicks, Engr.

Tenn., Memphis—City, reported, plans expending \$3,000,000 for water works, including pumping station, mains and filtration plant; Fuller & McClintock, 170 Broadway, New York, Engrs.

Tex., Houston—American Cast Iron Pipe Co., Public Natl. Bank Bldg., has contract for furnishing water mains for Lowell from Tenth to Inker St.; B. P. Panas, Esperson Bldg., contract for laying mains; American Cast Iron Pipe Co., for furnishing main for Pierce St., Wm. A. Brunet, 3211 Crawford St., for laying pipe; city will construct 12-in. water main on Ave. E from Bolton to Seventy-ninth St. and on Bolton, Ave. E to Canal St.; cost \$16,000.

Tex., Houston—Harper Construction Co., Dallas, reported, has contract for \$100,000 water works and sewerage system at Highlands.

Tex., Port Isabel—City, G. Scanlon, Mayor, reported, soon receive bids for complete water works and sewerage system; cost \$135,000.

Va., Richmond—Dept. of Public Utilities installing \$10,000 pump with capacity of 52,000,000 gal. daily.

Va., Waynesboro—Town, I. G. Vans, Town Mgr., construct 8-in. feeder line from Rockfish Rd. to reservoir in East Waynesboro, distance of 5700 ft.; later will compete plans for developing Colner Springs and running flow of 2,500,000 gals. daily into city; pipe for this line let to Glamorgan Pipe and Foundry Co., Lynchburg. 1-15

Woodworking Plants

Md., Salisbury—Allen Auto Body Works, Inc., chartered; Richard W. Allen, Royce B. Wilson.

N. C., Hickory—W. A. Setzer, Catawba, has contract for furniture plant in Highland for D. E. Frye; 2 buildings each 48x85 ft.; one building for machinery and equipment, other for finishing purposes; Q. E. Herman, Archt.

N. C., Hickory—Merger, reported, under consideration of \$1,000,000 furniture manufacturing company, Martin Furniture Co., Hickory Furniture Co., and Hickory Chair Mfg. Co., subject to vote of stockholders April 13; company will be known as Hickory Chair Mfg. Co.

N. C., High Point—C. L. Well, American Bank Bldg., Greensboro, reported, acquired Knox Furniture Mfg. Co. for a client.

Tenn., Dayton—East and West Desk Co., John Ruffner, Pres., acquired site in North Dayton for manufacturing desks designed by W. T. P. Geiger.

FIRE DAMAGE

Ala., Cullman—H. P. Bigger's residence; East Point School near Cullman.

Ala., Gadsden—John Hagin's gin in south end of county.

Ga., Toccoa—Boys' dormitory of Toccoa Falls Institute; loss \$10,000; R. A. Forerst, Pres.

Ky., Lawrenceburg—Barn of James L. Sherwood, Pres., Lawrenceburg Natl. Bank; loss \$10,000.

La., Alexandria—Residence occupied by W. E. Carlyon on plantation, Bayou Jean de Jean.

La., Monroe—Magnolia Inn, 310 N. Third St., owned by L. L. Lieber, 1611 Jackson St.; loss \$10,000.

La., New Orleans—Atlanta Hotel, 308 Bourbon St., operated by Peter Mercadel.

Md., Bowie—Two barns at Bowie Race Track, Richard Pending, Supt.

Md., Brownsville—Clarence Iselin's residence.

Md., Easton—Whittman Tomato Cannery of Sherwood Packing Co.; loss \$10,000.

Md., Stevenson—Barn and garage on Green Spring Valley estate of J. Sawyer, Jr., near Stevenson.

Miss., Canton—S. Courtney's residence.

Miss., Madden—High School; loss \$15,000.

Miss., Seminary—Jack Conner's feed and grocery store.

Miss., Weir—Fair Company's store; C. A. Franks' store; loss \$15,000.

Okla., Miami—Lincoln School annex; loss \$15,000.

S. C., Lake View—Three-story hotel owned by Palmetto Hotel Co.; loss \$85,000.

Tenn., Tullahoma—John V. Wilson's store; offices of R. L. Dosett, physician, T. W. Jackson, dentist; W. M. Staley's studio; S. S. Blackman's three buildings; loss \$40,000.

Tex., El Paso—B. F. Hammett Bldg., Oregon and Overland Sts., housing Bellman Dept. Store, Sam Bellman, owner, Moore's Olympic Club and Zapateria Store, Zapateria Leon, owner; loss \$160,000.

Tex., Marshall—Residences of Mrs. Cullen

Womack, Mrs. Lizzie Cook and T. P. Davis; loss \$25,000.

Tex., Sherman—Building at 105 W. Jones St. occupied by Wood Auto Co.; loss \$30,000.

Tex., Wichita Falls—A. C. Estes' residence, Iowa Park Rd.; loss \$12,000.

Va., Alexandria—Plant of George Washington Stone Corp. on river front at foot of Franklin St.; loss \$50,000.

Va., Charlottesville—Packing shed owned by Albemarle Fruit Packers, Inc.; loss \$10,000.

Va., Clifton Station—Dr. J. H. Ferguson's residence near Clifton Station; loss \$25,000.

Va., Stanardsville—C. L. Bickers & Son's stores; Christian Church; Methodist Church; County Courthouse and Clerk's and Treasurer's Office Bldg.; Negro Odd Fellows Hall.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

Ky., Ashland—Lincoln Lodge No. 252, I. O. O. F., rebuild brick, steel and conc. bldg. damaged by fire; use present walls; 2 stories, 50x142.6 ft., conc. floors, gypsum roof, \$22,000; will probably let contract on cost plus basis to E. E. Ramey. 3-12

Md., Baltimore—Baltimore Forest No. 45, Tall Cedars of Lebanon, Archie C. New, Chmn., Bldg. Comm. 2 E. Lexington St., will take new bids on \$200,000 auditorium, rear of 1209-15 N. Charles St.; fireproof, brick, 79.6x115 ft., 1 story, basement, mezzanine and balcony, brick, stone and rein. conc., wood, terrazzo, tile and conc. floors, conc. foundation, gypsum and built-up roof; Bernard Evander, Archt., 20 E. Lexington St.; Henry Adams, Mech. Engr., Calvert Bldg.; Herman F. Doeleman, Struct. Engr., Balto. Trust Bldg. 2-19

N. C., Newton—American Legion, V. O. Sipe, member, Bldg. Comm., plans clubhouse; auditorium, kitchen; tentative plans call for structure 160x50 ft., seat 600 to 700, brick veneer.

Tex., Fort Worth—Masonic Temple Builders' Assn., W. S. Cooke, member, 2291 Weatherbee St., receives bids until April 7 at office Archts. for superstructure of \$1,000,000 temple, North and Henderson Sts.; stone and rein. conc., 4 stories and basement, 167x120 ft., orna. iron, marble wainscot, tile entrance, terrazzo floors, steel sash; W. G. Clarkson & Co., Archts., 610 First Natl. Bk. Bldg. 3-5

Tex., La Feria—American Legion plans \$10,000 clubhouse; face and common brick and rein. conc., 1 story, tile work, cast stone trim, metal lath.

Bank and Office

Okla., Oklahoma City—H. M. Rummell, 1008 N. Broadway, has plans for 15-story office bldg., Second St. and Harvey Ave.; Schumacher & Winkler, Archts., Hightower Bldg.

Tex., Laredo—Wm. Epstein, 310 E. Craig St., San Antonio, Alphonse Wormser, Representative, Laredo, having plans drawn by Walter H. Anderson, Archt., 703 Travis Bldg., St. Antonio, and Guy M. Trout, Asso. Archt., Laredo, for \$650,000 office bldg., Matamoros and Florez Sts.; Matthews & Kenan, Engrs.; L. D. Royer, Mech. Engr., both Smith-Young Tower, San Antonio; plans ready about April 1, bids by invitation; plumbing, heating and wiring under separate contract; 10 stories, struct. clay tile, brick and stone; erect \$60,000 annex for Gateway Chevrolet Co.; latter 2 stories, fireproof, plate glass and solid factory type windows. 3-5

Tex., Longview—First National Bank, C. A. Loftis, Pres., remodel and enlarge banking quarters; \$30,000; safe deposit vault, tellers' cages.

Tex., Tyler—Dr. J. H. Pope is president of Bd. of Trustees, Dr. L. C. Polk, treasurer. Interested in erection of Medical Arts and Hospital building; nothing definite; finances not arranged.

Va., Norfolk—Morris Plan Holding Corp. purchased old Norfolk National Bank Bldg., 242 E. Main St.; remodel interior and exterior for Morris Plan Bank of Virginia, L. H. Zehmer, Vice Pres.-Cashier.

Churches

Miss., Pascagoula—Methodist Church, Rev. E. L. Ledbetter, Pastor, remodel; new pulpit furniture; elect. wiring.

N. C., Winston-Salem—Wentz Memorial Congregational Church, H. F. Morgan, Chmn., Bldg. Comm., considers rebuilding burned structure.

Okla., Oklahoma City—Exchange Ave. Baptist Church, Rev. Hale V. Davis, Pastor, erect \$34,000 Sunday school.

Tex., Dallas—All Saints P. E. Church, Rev. J. R. Maceo, Rector, Peak St. and Ross Ave., considers erecting new church.

City and County

Ark., Russellville—Pope County voted \$150,000 court house bonds; H. Ray Burkes, Archt., Wallace Bldg., Little Rock; preliminary plans; brick and stone, 4 stories and basement, 120x74 ft., conc. and marble floors, built-up roof. 2-19

Ga., Atlanta—City, Jas. L. Key, Mayor, plans fire station, Gilmer and Courtland Sts.

La., Abbeville—City Council, B. U. Broussard, Mayor, ready for bids in about 2 weeks for city hall, site present structure; \$30,000, fireproof, 2 stories, 40x95 ft., brick, stone trim; auditorium seat 400 to 500; C. H. Leinbach, Archt., 805 Central Bk. Bldg., Dallas, Tex.

La., DeQuincy—City Council, H. L. Smith, Chmn., City Hall Comm., plans city hall improvements; 2 rest rooms, auditorium, enlarge court room, 8-cell jail; vote on tax in few weeks.

Mo., Independence—Jackson County, Harry S. Truman, County Judge, selected May 23 as tentative date of election on \$4,000,000 bonds; lately noted to vote May 12; amount includes \$4,000,000 for court house and site and \$250,000 for detention home and site, both in Kansas City, and \$200,000 to remodel court house in Independence. 3-12

Mo., Kansas City—Jackson County, Harry S. Truman, County Judge, selected May 23 as tentative date to election on \$4,000,000 court house and site and \$250,000 detention home and site bonds; lately noted to vote May 12. See Mo., Independence. 3-12

Tex., Beaumont—Jefferson County Commrs.' Court receives bids April 13 for jail equipment for \$1,000,000 Jefferson County court house; Fred C. Stone, Goodhue Bldg., and A. Babin, Perlstein Bldg., architects. 3-5

Tex., Corpus Christi—Nueces County Bd. of Commrs., Nat. Benton, Judge, opens bids April 16 for office equipment for \$100,000 court house annex; jail equipment let to Southern Prison Co., 4700 S. Presa St., San Antonio, at \$32,894; Dielmann & Levy, Archts.-Engrs., State Natl. Bank Bldg. 1-29

Tex., Del Rio—Val Verde County, Roger Thurmond, Judge, remodel court house and jail; plans ready about March 31; Henry T. Phelps, Archt., Hicks Bldg., San Antonio.

Tex., Jasper—Jasper County remodel and erect 2-wing addition to court house; \$35,000; 2 and 3 stories; DeFee & White, Archts., M. & M. Bldg., Houston; drawing plans.

Dwellings

Ala., Birmingham—Dr. L. E. Sorrell, 2501 16th Ave., N., let contract to G. A. Paul, 2337 20th Ave., S., for stone veneer residence, Shades Mountain; 2 stories and basement,

30x66 ft., oak floors, conc. and stone foundation, slate roof; Jas. L. Gatling, Archt., Bankers Bond Bldg.

D. C., Washington—A. J. Dinger, 908 Sheridan Ave., N. W., erect residence, 5423 33rd St., after plans by Chas. E. Dillon.

D. C., Washington—G. S. Seek, 6929 Ga. Ave., N. W., erect residence, 1440 Holly St., after plans by Proctor & Falcon.

D. C., Washington—Hugh A. Thrift, Union Trust Bldg., erect 9 dwellings, 1701-17 D St., N. E., after plans by Geo. T. Santmyers, Archt., 1416 I St., N. W.

D. C., Washington—Henry J. Connor, 3221 Conn. Ave., N. W., has permit for \$10,000 residence, 1317 Jonquil St., N. W.; brick and hollow tile, 2½ stories; owner builds.

D. C., Washington—Vernon M. Briggs has permit for \$10,500 dwelling, 1438 Jonquil St., N. W.; brick and frame, 2 stories.

D. C., Washington—Edson W. Briggs Co., 1001 15th St., N. W., erect brick or local stone dwelling Rock Creek Park Estates; 2½ stories, slate roof; Elmer Cappelman, Archt., 110 N. Seventh St., Richmond, Va.; drawing plans.

D. C., Washington—A. Cult Yates, 1620 16th St., erect brick and stone residence, Massachusetts Ave.; 3 stories, 50x38 ft., tile roof, steel sash, vapor heat, oil burner; Upman & Adams, Archts., Woodward Bldg.; Ward Brown, Asso. Archt., 1211 Connecticut Ave.; drawing plans.

Fla., Hialeah—H. R. Howell, Deer Park, has low bid at \$37,542 from J. Y. Gooch & Co., Bedford Bldg., Miami, for residence, garages, etc.; V. H. Nellenbogen, Archt., 925 Lincoln Rd., Miami Beach. 3-5

Fla., Miami—Chas. J. Davol, care Davol Land Co., 69 Point St., Providence, R. I., and Miami, erect \$50,000 residence, garage, servants' quarters, etc., Brickell Ave. near 16th St.; rein. conc., conc. block, brick, tile and stucco, tile and oak floors, tile roof, probably gas fired hot air heat; landscaping; John N. Bullen, Archt., 607 Exchange Bldg., Miami.

Fla., Palm Beach—Chas. Chadwick, 2516 S. Wabash Ave., Chicago, Ill., and Palm Beach, plans residence; Treanor & Fatio, Archts., Phipps Plaza.

Ga., Atlanta—J. R. Rhodes, care Parker Pen Co., 202 Peachtree Arcade, plans \$15,000 residence, Lullwater Rd., Druid Hills; brick veneer, 2 stories and basement, 2 baths, 9 rooms, steam heat, hardwood and tile floors.

Ga., Atlanta—Professor L. R. Siebert, Georgia School of Technology, plans \$25,000 residence, Rock Springs Rd.; brick veneer, 2 stories and basement, conc. foundation, hardwood and tile floors, slate roof, steam heat.

Ga., Savannah—W. C. Brewer, 802 E. Anderson St., plans residence.

La., New Orleans—O'Neil Labeaud, 3536 Annette St., erect dwelling; slate roof, orna. iron, brick work.

Md., Annapolis—Miss M. M. Wilkins, 1519 28th St., N. W., Washington, D. C., plans residence, Bay Ridge.

Md., Baltimore—Geo. P. Mueller & Sons Co., 820 S. Conklin St., plans number 2-story brick dwellings.

Md., Baltimore—Geo. B. Hess, 8 E. Baltimore St., opens bids March 20 for residence, Seven Mile Lane near Park Heights Ave.; probably brick, 2½ stories; O. Eugene Adams, Archt., 329 N. Charles St.; following contractors estimating: Thos. Hicks & Son, 106 W. Madison St.; E. A. Cullings, 698 Gladstone Ave.; C. W. Littleton & Son, 4313 Liberty Heights Ave.; Peyton B. Strobel Construction Co., 206 E. Lexington St.; L. L. Chambers, 36th St. and Roland Ave.; Edward A. Levi, 2399 Sulgrave Ave.; C. K. Wells, 3538 Old York Rd. 1-15

Md., Baltimore—A. T. Schussler, Munsey Bldg., plans cottage, Bay Ridge.

Md., Baltimore—Dr. Richard W. TeLinde, 1107 St. Paul St., has low bid from Ralph McMurray, 39th and Old York Rd., for \$20,000 residence; T. Worth Jamison, Jr., Archt., 12 E. Pleasant St. 3-5

N. C., Charlotte—Louis Cook, 2615 E. Fifth St., erect \$10,000 brick residence, 2524 Hemstead Court.

Tex., Brownsville—E. H. Hattabough erect hollow tile and stucco residence, West Banker Addition; 28x36 ft., oak and pine floors, comp. roof, tile bath.

Tex., Dallas—Mrs. John Sparger, 4112 Hawthorne Ave., erect \$17,000 brick veneer residence, Walnut Hill Lane and Midway Rd.; 2 stories, about 40x100 ft., oak floors; A. C. Baker, Archt., 4117 Normandy St.; bids in.

Tex., Houston—Wallace Pratt, 4407 Mt. Vernon St., erect tile and stucco residence, 2 stories, 21.2x95 ft. with 17x35-ft. wing, oak block, pine and tile floors, 2-story, 20.1x32.6 ft.; John F. Staub, Archt., 4301 S. Main St.; bids in.

Tex., Jasper—State Game, Fish & Oyster Comsn., J. W. Tucker, Exec. Sec., Littlefield Bldg., Austin, opens bids March 27 for 2 dwellings and garages, 9 miles from Jasper; frame or log exterior; 1 story, 42x32.6 ft. and 36x18 ft., conc. piers, rock chimneys, wood floors, screens.

Tex., Lyford—H. M. Mooradian, Fort Atkinson, Wis., and Lyford, erect frame and stucco Spanish type residence; 1 story, oak and pine floors, Mission tile roof, 6 rooms; let contract at once.

Tex., Mercedes—Robt. E. Kirkpatrick, Menton Bldg., erect brick veneer residence; 2 stories, 9 rooms, tile, oak and pine floors, stained shingle roof, metal bath; W. H. Benton, Archt., Harlingen.

Tex., Santa Rosa—Whitt Sparks erect Colonial type frame residence, Pomelo Rd.; 1 story, oak and pine floors, stained shingle roof, Sheetrock, Textone.

Tex., Sterling City—Roy T. Foster erect face brick and hollow tile residence, Third and Ennis Sts.; fireproof, 2 stories, 45x50 ft., cast stone trim, oak floors, clay tile roof, 3 tile baths, metal lath and windows, orna. iron; John G. Becker, Archt., San Angelo.

Government and State

Ala., Maxwell Field, Montgomery—Constructing Quartermaster has low bid at about \$61,500 from Batson-Cook Co., Inc., West Point, Ga., for 1 Air Corps machine shop, and 1 Air Corps assembly shop. 2-19

Ala., Maxwell Field, Montgomery—Constructing Quartermaster, Maxwell Field, Capt. M. A. McFadden, receives bids April 9 for detachment barracks and hospital, fire station, guard house and post exchange. 2-26

D. C., Washington—David Lynn, Architect of the Capitol, advises plans for bldgs., U. S. Botanic Garden, \$800,000, "should be available for bidders within next 10 days or 2 weeks"; Bennett, Parsons & Frost, Const. Archts., 80 E. Jackson Blvd., Chicago, Ill. 11-27

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., receives bids until March 23 for clearing site for \$10,000, 000 Department of Justice Bldg.; Zantinger, Borie & Medary, Archts., Otis Bldg.; Isaac Hathaway Francis, Heating-Plumbing-Wiring Engr., 1520 Locust St., both Philadelphia, Pa.; Gravell & Duncan Lewis, Struct. Engrs., Tower Bldg., Washington; drawings from office Supvg. Archt. 2-12

Ga., Fort Benning—Following have plans for 5 field and 51 company officers' quarters, bids March 31 by Constructing Quartermaster, Fort Benning: Batson-Cook Co., Inc., West Point, Ga.; Williams Lumber Co., Inc., 13th St.; Walker Electrical Co., 111 12th St., both Columbus, Ga.; Algernon Blair, First Natl. Bank Bldg.; Samford Bros., Inc., 301 Washington Ave., both Montgomery, Ala.; Wagar & Co., Norris Bldg.; Grahn Construction Co., Red Rock Bldg.; A. K. Adams & Co., 542 Plum St., N. W., all Atlanta, Ga.; A. S. Bacon & Sons, Inc., Schwarz Ave., Savannah, Ga.; R. H. Hamill Co., R. & P. Bldg., Huntington, W. Va.; G. A. Hanson Co., Inc., 215 Madison St., Tampa, Fla.; Townsend Lumber Co., N. Towers St., Anderson, S. C.; Edward S. Moore & Son, Kokomo, Ind.; Fiske-Carter Construction Co., Spartanburg, S. C.; J. C. Miller, Construction Co., Campbellsville, Ky. 3-12

Ky., Greendale—State Bd. of Charities and Corrections receives bids until March 25 at office H. A. Churchill, John T. Gillig, architects, Fayette Bk. Bldg., Lexington, for materials and certain branches of work for school, Kentucky Houses of Reform; bids include crushed stone, cement, sand, common brick, salt glazed brick, face brick, bricklayers' cement, conc. floor hardener, rein. steel, steel joists, sheet metal and roofing, millwork, lumber, wood flooring, struct. steel, steel sash, glass and glazing, painting, misc. and orna. iron, metal lath, cut stone, caulking, metal trim and plaster material; plans from Archts.

La., Baton Rouge—Quartermaster, Fort McPherson, Ga., has low bid at \$11,353 from W. M. Day, 603 S. 14th St., Baton Rouge, for lodge, National Cemetery. 2-26

Md., Fort George G. Meade—Prospective estimators on 7 single sets non-commissioned officers' quarters, bids March 26 by Constructing Quartermaster: M. I. O'Connor, Northampton, Miss.; B. Tellinger & Son, 6459 N. 16th St., Philadelphia, Pa.; Federal Engineering Co., 43 Tremont St., Boston, Mass.; D. L. Rathbone & Sons, Inc., Roslyn, Va.; D. M. W. Constructing Co., Inc., 2058 Fulton St., Brooklyn, N. Y.; Talles Con-

struction Co., 4024 Bonner Rd.; Lagna & Rossi Co., Bel Air Rd. and Southern Ave., both Baltimore, Md.; Samford Bros., Inc., 301 Washington Ave., Montgomery, Ala.; A. S. Bacon & Sons, Inc., Savannah, Ga.; R. N. Rust, Braddock Heights, Md.; Minter Homes Corp., 340 Third St., Huntington, W. Va.; English Construction Co., 1315 H St., N. W.; E. E. Ward & Son, 3563 11th St., N. W.; W. D. Taylor, 2500 Carroll Ave., all Washington, D. C.; A. C. Warthen, Kensington, Md.; Earnest Cook, Silver Spring, Md. 3-5

Md., Cambridge—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., rejected bids for post office remodeling and enlarging; \$15,000. 3-5

Md., Fort Hoyle—Additional prospective estimators on 3 sets of non-commissioned officers' quarters, bids March 25 by Constructing Quartermaster: Bailey & Coale, Churchville, Md.; Lacchi Construction Co., Munsey Bldg.; J. Frank Tranzilla, Lanvale and Dickson Sts.; T. F. Watts, 12 W. Madison St., all Baltimore, Md.; Murray L. Hopkins, Aberdeen, Md.; Taylor-Stone Co., McDermott, O.; Indiana Limestone Co., Bedford, Ind.; M. I. O'Connor, Northampton, Mass.; B. Tellinger & Son, 6459 N. 16th St., Philadelphia, Pa. 3-12

Tenn., Chattanooga—Constructing Quartermaster, 1225 James Bldg., receives bids until April 7 for lodge, Chattanooga National Cemetery.

Tex., Fort Sam Houston, San Antonio—Constructing Quartermaster, Fort Sam Houston, receives bids April 6 for 12 sets non-commissioned officers' quarters.

Tex., Fort Sam Houston, San Antonio—Following have plans for 3 field officers' quarters and 14 company officers' quarters, bids April 3 by Constructing Quartermaster, Fort Sam Houston: Bansbach Bros. Construction Co., 250 W. Josephine St.; Andrew Vogel (field officers' quarters only), 319 Jones Ave., both San Antonio; A. J. Rife Construction Co., 1913 N. Harwood St.; H. W. Underhill Construction Co., 711 Construction Bldg.; Bellows-Maclay Construction Co., all Dallas, Tex.; Robt. E. McKee, 1918 Texas St., El Paso, Tex.; Messenger & Dalton, Box 603, Pittsburg, Kan.; Rosen & Fischel, Inc., 11 S. LaSalle St., Chicago, Ill.; S. & W. Construction Co., Randolph Field, Tex. 3-12

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, has low bid at \$78,400 from Geo. E. Wieland, 106 E. 25th St., Austin, for 7 company officers' quarters; John M. Marriott, Archt., Frost Natl. Bk. Bldg., San Antonio. 2-19

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, has low bid at \$148,783 from Bellows-Maclay Construction Co., Construction Bldg., Dallas, for 11 field officers' quarters. 2-19

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, receives bids until April 6 for 1 officer's apartment bldg.; struct. clay tile, stucco and rein. conc., 2 stories, metal lath, tile roof, wood and tile floors, \$25,000; receives bids April 9, for School of Aviation Medicine; \$75,000, struct. clay tile, rein. conc. and stucco, conc. floors, tile roof. 3-12

Va., Fortress Monroe—Following estimating on 3 double sets of non-commissioned officers' quarters, Fort Monroe, bids March 27 by Constructing Quartermaster: Davis Bros., 1716 Summit Ave.; Miller Manufacturing Co., Stockton and Sixth Sts., both Richmond, Va.; Harwood Construction Co., Law Bldg.; Water Front Lumber Co., Inc., River Road; Noland Co., Inc., 322 28th St., all Newport News, Va.; R. R. Richardson Co., Inc., Natl. Bank of Commerce Bldg.; L. McCloud, 357 Arcade Bldg.; Marsteller Construction Corp., 515 Dickson Bldg.; Woodhouse Electric Co., 2942 Amherst St.; Building Supplies Corp., 1900-18 Monticello Ave., all Norfolk, Va.; W. F. Martens, P. O. Box 128; Chas. T. Taylor, 17 S. King St., both Hampton, Va.; J. A. Jones Construction Co., 411 Commercial Bank Bldg., Charlotte, N. C., and Box 131, Richmond; Karlstromer-Broyhill Construction Co., Hopewell, Va.; U. A. Underwood Co., N. C. Bank Bldg., Wilmington, N. C.; Fiske-Carter Construction Co., Spartanburg, S. C.; Townsend Lumber Co., Anderson, S. C.; Elliott Building Co., Inc., Hickory, N. C.; Thompson Construction Co., P. O. Box 66, Rosemary, N. C.; Southeastern Construction Co., 210 W. Second St.; Grinnell Co., Inc., 13 E. Fourth St., both Charlotte, N. C.; Taylor Manufacturing Co., Fredericksburg, Va.; Wilson Co., Charlottesville, Va.; Crane Co., 1225 I St., N. W., Washington, D. C.; Hartenstine-Zame Co., Inc., 225 Broadway, New York; A. S. Bacon & Son, Schwarz Ave., Savannah, Ga.; M. H. Sobel Co., 1031 First Natl. Bank Bldg., Detroit, Mich. 3-5

Hospitals, Sanitariums, Etc.

Ala., Tusculooosa—United States Veterans Bureau, Constr. Div., Room 764, Arlington

Bldg., Washington, D. C., receives bids until April 21 for U. S. Veterans Hospital bldgs. and utilities, including roads, walks, grading and drainage; \$1,100,000, 250 beds; work includes excavating, rein. conc. constr., hollow tile, brick work, cut stone, cast stone, architectural terra cotta, marble work, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, steel flagpole, steel sash, interior steel stairs with slate treads, exterior steel stairs, steel shelving and cabinets, metal stall partitions, slate, metal and built-up roofing, skylights, roof ventilators, metal lathing, plastering, sound deadening, dumbwaiter, metal weatherstrips, platform scales, insect screens, window shades, boiler plant, steel water tank and tower, nurses' call system; fire alarm system; separate bids for (a) General, including radial brick chimney; (b) plumbing, heating, elect. work and outside sewer, water, gas, steam and elect. distribution systems; (c) elect. elevators; (d) refrigerating and ice making plant; (e) steel water tank and tower; drawings from Constr. Division. 1-15

D. C., Washington—Department of Interior, 18th and F Sts., approved plans for bldg. for tubercular patients, St. Elizabeths Hospital, Anacostia; \$240,000 appropriation available; about ready for bids; next erect \$800,000 continuous treatment bldg., with constr. of \$1,050,000 receiving ward bldg. to follow. 11-20

Ga., Augusta—United States Veterans Bureau, Arlington Bldg., Washington, D. C., plans to soon call for bids for 2 duplex quarters, U. S. Veterans Hospital, and later on \$400,000 administration and clinic bldg.; \$2,000,000 expenditure planned for next 3 years. 11-27

Md., Fort George C. Meade—Constructing Quartermaster, reported, has low bid from John M. Kisner & Bros. Lumber Co., 208 Norfolk Ave., Fairmont, W. Va., for 15 sets company officers' quarters. 2-26

N. C., Asheboro—Randolph County Hospital, D. B. McCrary, Chmn., Bldg. Comm., receives bids March 24 (extended date) for \$100,000 hospital; fireproof, stone trim, conc. foundation, steel joist, comp., cement and tile floors, tar and gravel roof; Erie G. Flanagan, Archt., Henderson; following contractors estimating: Goode Construction Co., 11 E. Fifth St., Charlotte; Moore & Patton, Morganton; S. S. Toler & Son, Natl. Bank Bldg., Rocky Mount; J. W. Stout, Inc.; W. J. Jewell; Jewell-Riddle Co., Inc., all Sanford; Angle-Blackford Co., Inc., Amer. Bank Bldg.; J. R. Owen & Son, 1006 W. Lee St., both Greensboro; Burrow & Lamb, S. E. Trogden, both Asheboro; North-Eastern Construction Co., Nissen Bldg.; Frank L. Blum & Co., 860 W. 4½ St., both Winston-Salem; S. E. Trogden, Asheboro. 2-26

South Carolina—United States Veterans' Bureau, Arlington Bldg., Washington, D. C., plans \$1,300,000 300-bed hospital; location not determined.

Tex., Dallas—Dr. P. Murphy, Medical Arts Bldg., erect brick and stone clinic, Fairmount and Wellborn Sts.; 1 story, 105x4 ft., tile roof, metal lath, rubber tile and pine floors, tile floors and wainscoting, Tennessee pink marble; Foshee & Cheek, Archts., 1901½ N. Harwood St.; bids in.

Hotels and Apartments

La., Plaquemine—Silber Brothers rebuild or erect new structure to replace Central Hotel on Main St., recently damaged by fire; Jones, Roessle & Olschner, Archts., Maison Blanche Bldg., New Orleans.

Tenn., Chattanooga—Leonard Haas, of Underwood, Haas & Gambrell, Candler Bldg., Atlanta, Ga., advises that no plans have been undertaken for enlarging Fairland Inn at present time. 3-12

Tex., Dallas—H. T. Crabtree, 346 Woodin St., erect \$15,000, 2-story, brick, veneer, 20-apartment, 221-31 E. 10th St.

Tex., Gilmer—E. P. McAdams, 809 W. Ninth St., Dallas, erect 5-room hotel.

Tex., Houston—26 Sunset Road, Inc., W. T. Carter, Union Natl. Bank Bldg., and others chartered to erect \$1,080,000, 18-story, co-operative apartment at 26 Sunset Blvd., first of three units planned on this tract; rein. conc., brick, cast stone trim, vacuum heating system, all millwork of mahogany, bathrooms and kitchens of tile, 33 apartments, basement for garage space; Burns Roensch, Archt., Union Natl. Bank Bldg., Houston; Paul F. Olsen, Const. Engr., 720 N. Wabash Ave., Chicago; W. A. Smith, Realtor, Post-Dispatch Bldg., will have charge of sales and management of building; plans to begin work in 60 to 90 days.

Va., Roanoke—Virginia Bridge & Iron Co. has contract for 250 tons steel to be used in

erection of west wing of Hotel Ponce de Leon recently noted burned at loss \$200,000; construction going forward on foundation; W. C. Turner, Pres. of hotel corporation, soon call for bids; Frye & Stone, Archts., MacBain Bldg. 3-12

Va., Roanoke—Hotel Roanoke, Kenneth R. Hyde, Mgr., erect \$180,000, 4-story, 53x110 ft., steel, brick and stucco addition containing 60 rooms and 25-car garage.

Miscellaneous

Fla., Hialeah—Miami Jockey Club, Inc., Major Barclay H. Warburton, Pres.; Frank J. Bruen, Dir.-Mgr., reported, considering \$500,000 improvements.

Ga., Atlanta—Harvey's Restaurant, Pete Macris, Propr., Luckie and Fairlie Sts., N. W., erect addition to and remodel restaurant; new front, tile and terrazzo floors, fixtures

Md., Baltimore—Baltimore Country Club, Heyward E. Boyce, Pres., Redwood and Calvert Sts., soon select architect for \$250,000, brick, fireproof clubhouse, Club Road; following architects submitting plans: Wyatt & Nolting, Keyser Bldg.; Mottu & White, Baltimore Life Bldg.; Taylor & Fisher, Baltimore Trust Bldg.; Palmer & Lamden, 513 N. Charles St.; Office of Joseph Evans Sperry, Calvert Bldg.

Md., Baltimore—The Lochearn Country Club, Inc., Samuel Levin, Calvert Bldg., plans clubhouse; architect not selected.

Md., Baltimore—Louis Hasslinger, J. W. Walker, 1707 N. Charles St., remodel 4-story brick building for lunch room; Frederick Thomas, Archt., E. 33rd St.

N. C., Kitty Hawk—Wright Memorial Bridge Co., owners of Currituck-Dare Bridge and beach property, have plans completed about June 1 by Frank Dawson, Elizabeth City, for \$25,000, 50x110 ft., 2-story pavilion and bath house for Kitty Hawk Beach; dancing pavilion, inclosed with glass, will be 40 x90 ft.; bath house to accommodate 200 people. 3-12

Tex., Port Arthur—J. E. Grammier, Waco Ave. and 5th St., plans funeral home.

Schools

D. C., Washington—District Commrs., Roland M. Brennan, Engr. Dept., Dist. Bldg., have low bid at \$70,995 from C. A. Hofferberth Construction Co., Second and M Sts., S. W., for Walker Stadium at Dunbar High School; A. L. Harris, Municipal Archt., Dist. Bldg. 3-5

Fla., Goulds—Dade County Bd. of Public Instruction, Jas. Mitchell, Chmn., Miami, erect \$16,000 school near Goulds.

Fla., Dowling Park—Suwanee County Bd. of Public Instruction, Live Oak, receives bids April 7 for \$10,000, one-story, 125x55 ft., brick school; asbestos shingle roof, cast stone, steel sash; Alvin R. Moore, Archt., Ames Bldg., Tallahassee.

Fla., Winter Park—Rollins College, E. T. Brown, Treas., has plans by Kiehnel & Elliott, Seybold Bldg., Miami, for \$75,000 theater; Spanish-Mediterranean style; seat 400 people; bidding will be confined to Florida contractors. 3-5

Ga., LaGrange—School Bd. having preliminary plans prepared by Burge & Stevens, Marietta Bldg., Atlanta, for \$30,000, one-story and basement, brick veneer, 8-classroom and cafeteria school; comp. roof, wood floors. 2-26

Ga., Sale City—Mitchell and Colquitt Counties, care P. A. Branch, Chmn., erect consolidated school; architect not stated.

Ga., Savannah—Chatham County Bd. of Education, O. B. Strong, Supt., has low bid from The Artley Co., 504 E. Bay St., at \$141,000 for steel joist construction and at \$148,500 for rein. conc. construction of 2-story, rein. conc., brick and tile unit of Jr. High School; heating and plumbing, \$7769 and \$5989 from O. A. Kimball, 115 W. Congress St.; oil-burning equipment, \$1035, Peerless Plumbing & Heating Co., 105 W. York St.; Levy & Clark, Archts., Blum Bldg.; Cletus W. Bergen, Asso. Archt., Liberty Bank & Trust Bldg. 3-5

Ga., Toccoa—Toccoa Falls Institute, R. A. Forrest, Pres., plans rebuilding dormitory noted damaged by fire at loss \$10,000.

Ga., Tifton—Tift County Bd. of Education receives bids in few days for \$15,000, one-story, brick veneer school; comp. roof, wood floors, hot air heat; plans by State Dept. of Education, Capitol Bldg., Atlanta. 3-5

La., Baton Rouge—East Baton Rouge Parish School Bd. ready for bids about April to be received until about May 10 for \$75,000 addition to Istrouma High School consisting of one-story, 60x100 ft. gymnasium and one-story, 30x90 ft. science building; both brick,

comp. roof, wood floors; Lewis A. Grosz, Archt., Raymond Bldg. 3-12

La., Hahnville—St. Charles Parish School Bd. ready for bids for following schools: Seven-room and auditorium school at Bayou des Allemands; 4-room and basement school at Paradis; 2-room and basement school at Ama; 2-room and basement school at Kilona; 6-room and auditorium school at Luling; 4-room and basement school at Norco; 4-room and basement school at St. Rose; brick; tile and comp. roofs; also ready for bids for 6 frame schools; 5 will be 2 rooms and one 4 rooms; asbestos roofs; plans ready in about 30 days for alterations and additions to high schools at Destrehan and Hahnville; additions will be 2 stories and basement, brick and tile; Wm. R. Burk, Archt., Balter Bldg., New Orleans. 1-1

La., Plaquemine—Iberville Parish School Bd., L. P. Terrebonne, Sec., receives new bids April 7 on frame school at Bayou Pidgeon, additions to frame school at Crescent, and two-room frame school at Grand River and alterations to brick school at Plaquemine; Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans. See Contracts Awarded—Schools. 3-5

La., Hammond—Dist. No. 106, Eighth Ward, votes April 6 on \$25,000 bonds for junior high school; address Tangipahoa Parish School Bd.

Md., Baltimore—Bd. of Public Improvement Comsn., H. J. Leimbach, Supv. Engr., City Hall, having plans prepared by Wm. F. Stone, 2612 N. Charles St., for brick and stone school for handicapped children, Franklin and Schroeder Sts.; plan to call for bids during summer. 2-12

Md., Baltimore—Following contractors estimating on 10-classroom brick addition to School No. 20, Federal and Eden Sts., bids March 26 by Bd. of Public Improvement Comsn., H. J. Leimbach, Supv. Engr.; Charles L. Stockhausen, 33 S. Gay St.; Lacchi Construction Co., Munsey Bldg.; North-Eastern Construction Co., 6 W. Madison St.; D. M. Andrew Co., 26th and Sisson Sts.; Price Construction Co., Maryland Trust Bldg.; P. C. Streett Engineering Co., 404 St. Paul St.; W. E. Bickerton Construction Co., 515 Cathedral St.; Frederick A. Fletcher, Archt., 13 W. Franklin St. 2-19

Md., Centerville—Queen Anne's County School Commrs. plan school building; plan calling election on bonds.

Md., Hagerstown—St. Mary's Catholic Church, Rev. Thomas D. Rinehart, Pastor, soon ready for bids for 2-story, brick high school and convent; Charles H. Burman, Archt., Waynesboro, Pa.

Md., Towson—Baltimore County School Commrs. receive bids March 24 for school in Dist. No. 6 on Eclo to Rayville road; 2 stories, brick; Smith & May, Archts., Baltimore Trust Bldg., Baltimore. 3-12

Miss., Enid—Enid Consolidated School Dist. Trustees, Frank A. Gore, Sec., receives bids March 25 (extended date) for 6-classroom and auditorium high school; plans at office Mr. Gore. 2-26

Miss., Forest—Town plans vote on bonds for repairing present building or erecting new structure; H. R. Carter, Supt. of Schools; P. J. Krouse, Archt., M-W Bldg., Meridian.

Miss., Hattiesburg—Forrest County Bd. of Education plans one-story and auditorium, brick school in Eatonville Consolidated School Dist.; election April 4 on \$25,000 bonds; E. C. Hearon & Sons, Archts., 121 W. Pine St.

Miss., Starkville—The Building Comsn., W. C. Trotter, Sec., State Capitol Bldg., Jackson, receives bids April 2 for furnishing furniture and equipment for Agriculture Bldg., A. & M. College; C. H. Lindsley, Archt., Tower Bldg., Jackson.

Mo., Joplin—Bd. of Education, Dr. J. J. Barnett, Pres., receives bids March 31 for \$250,000 North Junior High School; Thos. W. Williamson & Co., Archts., Topeka, Kans.; B. F. Cook, Const. Engr., 713 Linwood Blvd., Kansas City. 2-5

Okla., Chillico — Chillico Indian School, Lawrence E. Correll, Supt., plans \$90,000 boys' dormitory and \$10,000 employes apartment house. 10-9

Okla., Harrah—School Bd., O. G. McClurg, Pres., plans school building to replace structure noted burned at loss \$25,000.

Tex., Dumas—Bd. of Education having plans prepared by Guy A. Carlander, Fisk Medical & Professional Bldg., Amarillo, for \$150,000, brick, steel and rein. conc. school. 2-26

Tex., Flatonia—Flatonia Ind. School Dist. voted \$25,000 bonds for one-story, brick and rein. conc. high school; R. Newell Waters, Archt., Weslaco; E. A. Armin, Jr., Pres., School Bd. See Want Section—Building Material and Equipment. 2-26

Tex., Gainesville—Bd. of Education receives bids March 24 for \$55,000, 2-story, 135x57 ft., brick and rein. conc., cast stone trim ward school; asphalt and tile roof; Wyatt C. Hedrick, Inc., Archt., First Natl. Bank Bldg., Fort Worth; following contractors estimating: General—Thos. S. Byrne, Inc., Fort Worth Natl. Bank Bldg.; Cain & Cain, Moore Bldg.; L. C. Maples, 3614 Avenue H; Butcher & Sweeney, 806½ Taylor St.; Quisile & Andrews, 2212 W. 7th St.; West & Womack, Reynolds Bldg.; Jas. T. Taylor, Aviation Bldg.; E. S. Newcome & Co., Inc., Dan Waggoner Bldg., all Fort Worth; H. W. Underhill Construction Co.; Bellows-Maclay Construction Co., both Construction Industries Bldg.; J. O. Everett Co., 1713½ Oak St.; A. J. Rife Construction Co., 1913 N. Harwood St.; Doughty Construction Co.; H. H. Gowins, Wilson Bldg., all Dallas; W. L. Morris, B. P. Garvey, Jr., both Gainesville; Wetzel & Wood, Sherman; Plumbing and Heating—Beach Plumbing & Heating Co., 300 S. Main St.; A. E. Trimble, 1508 S. Henderson St.; S. P. Osburn, 1900 Fifth Ave.; Montrief & Montrief, 307 W. 13th St., all Fort Worth; J. C. Koriath Plumbing and Heating Co., Sherman; Electric—Eugene Ashe Electric Co., 505 Jones St.; Shotts Electric Co., 905 Throckmorton; Hensley Electric Co., 2245 N. Main St.; Hart Enterprise Co., Box 319, all Fort Worth; Electric Construction Corp., 209 S. Pearl St. 12-18

Tex., Nolan—Divide Rural School Dist. erect \$35,000 school; address Nolan County Bd. of Education, Sweetwater.

Tex., Perryton—Bd. of Education, W. R. Irwin, Sec., having plans prepared by Townes, Lightfoot & Funk, Johnson Bldg., Amarillo, for \$65,000, 2-story, brick and rein. conc. 2-26

Tex., Refugio—Refugio Ind. School Dist. votes soon on \$100,000 bonds for school building; Dielmann & Levy, Archts.-Engrs., State Natl. Bank Bldg., Corpus Christi.

Tex., San Marcos—City votes April 7 on \$200,000 bonds for brick high school; Ed. Taylor, Pres., School Bd.; Harvey P. Smith, Archt., Natl. Bank of Commerce Bldg., San Antonio.

Tex., San Perlita—Santa Margarita Ind. School Dist., care C. R. Johnson, ready for bids about March 25 for \$70,000 high school and \$30,000 grade school; both one story, brick and rein. conc.; conc., tile, oak and pine floors; Robt. L. Vogler, Archt., Klossner Bldg., Edinburg.

Tex., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., has low bid at \$11,532 from Turner Roofing & Supply Co., 1308 E. Houston St., for lockers and at \$17,641 from E. H. Sheldon & Co., Santa Fe Bldg., Dallas, for laboratory, vocational and business training equipment for \$1,000,000 Thomas Jefferson Sr. High School, Spanish Acres, under construction; Adams & Adams, Archts., Western Natl. Bldg.; Walsh, Burney & Key, Gen. Contrs., 928 N. Flores St.; Phelps & Dewees, School Archts., Gunter Bldg. 3-12

Tex., Sherman—Sherman Ind. Dist. School Bd., R. G. Piner, Sec., receives bids March 23 for school building; plans from John Tulloch, Archt., M. and P. Bank Bldg.

Tex., Sildell—Wise County Bd. of Education, Decatur, has plans by R. S. Glenn, 1608 Avenue H, Cisco, for \$15,000, brick, 8-room and auditorium. 1-29

Va., Tazewell—Tazewell County School Bd. plans requesting court for authority to call election on \$135,000 bonds in Jeffersonville Dist.; plans include high school in Tazewell, grade school in North Tazewell, grade school at Bishop, one-room schools in Thompson Valley and Poor Valley and addition to colored school at Tazewell; probably vote about April 20.

Stores

D. C., Washington—J. W. Beller, Transportation Bldg., and Blain Mallan receive bids March 24 for one-story, 5-store building, 1825 Columbia Road; Frederic B. Pyle, Archt., 1342 New York Ave.; contractors estimating: Wm. F. Lipscomb Co., 1406 G St.; S. J. Prescott Co., 814 13th St.; Schneider-Splend Co., 1416 F St.

La., Houma—J. H. Thatcher erect Thatcher Bldg., Goode and Court Sts.; brick; lower floor for stores, upper for 6 apartment; T. Chachere, Archt.

La., New Orleans—August Spraul, 1419 Joseph St., ready for bids for one-story, brick store, 5533 Atlanta St.

Md., Baltimore—Jacob Cohen, 5200 Park Heights Ave., having plans revised by David Harrison, 3735 Reisterstown Road, for alterations to 2-story, brick store and residence; Louis D. Jeffrey, 3535 Hayward St., Lessee.

Md., Westport, Baltimore—Louis A. Demely, 2234 Annapolis Road, having plans revised by Bernard Evander, 20 E. Lexington St., Baltimore, and take new bids on 2-story, brick, cinder block and stucco store and apartment, Annapolis Road. 3-5

Tex., Beaumont—W. W. Kyle, owner of Kyle Theater, receives bids April 12 for one- and two-story, 300x140 ft., semi-fireproof shop and office building, Orleans St. and Broadway; \$85,000, terrazzo and tile floors, tar and gravel roof, limestone, marble, metal ceilings, steel sash and trim, hollow tile, terra cotta trim, brass and bronze work; Babin & Neff, Archts., Perlstein Bldg. See Want Section—Building Material and Equipment. 3-12

Tex., Brownsville—Arthur Seabolt soon let contract for addition to store, S. Elizabeth St. between 12th and 13th Sts.; one story, rein. conc. and brick, built-up roof, hollow tile, conc. floor slabs.

Tex., Dallas—E. A. Dewitt, Melrose Court, erect brick, steel and tile building, 418-26 N. Harwood St.; \$28,900.

Tex., Dallas—A. A. Lander, Marvin Bldg., erect one-story, brick stores, 2812-22 N. Henderson St.; \$15,000.

Tex., Port Isabel—A. R. Tanner, Russell, Pa., and Port Isabel, soon let contract for 2-story, rein. conc. brick and hollow tile store and office building, Maxan St.; conc. and wood floors, cast stone trim.

Tex., San Antonio—Fire Eye Equipment Corp., R. H. Porter, Sec.-Treas., 2413 Buena Vista St., has low bid at \$7500 from Moeller & Weilbacher, 1211 Willow St., for one-story, 73x80 ft., rein. conc., tile and stucco building, Colorado and Menchaca Sts.; L. Harrington Co., Archts.-Engrs., Builders Exchange Bldg.

Bank and Office

D. C., Washington—Chas. W. Christian Co., 937 Providence Road, Charlotte, N. C., has contract at about \$65,000 for heating, ventilating, vacuum cleaner equipment and plumbing for \$750,000 office bldg. for American Red Cross; Trowbridge & Livingston, Archts., 527 Fifth Ave.; Welskopf & Pickworth, Engrs., 45 W. 45th St., both New York.

Ga., Atlanta—United Corp., Candler Bldg., let contract to Griffin Construction Co., P. O. Box 1424, for alterations and additions to 6-story bldg., Broad, Luckie and Forsyth Sts.; 2 additional floors, 50x170 ft., conc. floors, tar and gravel roof; linoleum, terrazzo and tile floors, limestone, mail chutes, marble, metal doors, built-up flat tar and gravel roof, sprinklers, steel sash and trim, hollow and interior tile, terra cotta trim, vault lights; \$150,000 to \$200,000; A. Ten Eyck Brown, Archt.; A. Barilli, Jr., Asso. Archt.; Robt. G. Lose, Struct. Engr., all Forsyth Bldg. 1-29

Tex., Galveston—Gulf, Colorado and Santa Fe Railway Co., F. G. Pettibone, Vice-Pres.-Gen. Mgr., let contract for \$1,000,000 general office bldg. addition to Robt. E. McKee, 1918 Texas St., El Paso; 8 stories with 11-story tower connecting 2 structures; fireproof, pile foundation, rein. conc. caps and grade beams, struct. steel and conc. frame, terra cotta exterior, granite, monel metal or bronze finish for entrances, cement, tile, mastic, comp. and terrazzo floors, marble base and travertine walls in elevator lobby, steel filing equipment, movable partitions, 29x52-ft. brick and conc. boiler house for steam heating system; plans by Engineering Dept., K. B. Duncan, Ch. Engr., Galveston; soon call for bids on plumbing, heating, wiring, elevators, telephone system, etc. 2-5

Tex., Longview—First National Bank, C. A. Loftis, Pres., let contract to Knutson Construction Co., Union Natl. Bank Bldg., to remodel and enlarge bldg.; \$30,000, safe deposit vault, 5 tellers' cages, rubber tile floors, plate glass; Jas. Ruskin Bailey, Archt., Public Natl. Bank Bldg., Houston.

Va., Alexandria—First National Bank let contract to W. P. Lipscomb Co., 1406 G St., Washington, for \$100,000 addition; fireproof, 3 stories, 40x96 ft., floors of tile, hardwood, marble, rubber, etc., conc. foundation, Johns-Manville 20-yr. built-up roof, metal doors, hollow tile, vaults, ventilators, wire glass, brass and bronze work; Milburn, Heister & Co., Archts.; C. W. Barber, Engr., both Hill Bldg., Washington; vault contract to York Safe & Lock Co., Bond Bldg., Washington, at \$12,000. 3-5

Churches

Tex., Paris—First Baptist Church let contract to Dorbant Construction Co., Dal-

Theatres

Fla., Winter Park—Rollins College erect \$75,000 theater. See Buildings Proposed—Schools.

Tex., Amarillo—J. N. Beasley, J. Ray, both Fisk M. & P. Bldg., and others, having plans prepared by W. Scott Dunne, Melba Theatre Bldg., Dallas, and ready for bids in about 6 weeks for \$400,000 theater, 9th and Polk Sts., to be leased to Paramount-Publix Corp., Paramount Bldg., New York; seat 1400 people; provide series shops on both Polk and 9th Sts.; terra cotta front. 3-12

Tex., Victoria—Jefferson Amusement Co., Beaumont, expend \$15,000 for improvements to Princess Theater on N. Main St.

Warehouses

D. C., Washington—Milburn, Heister & Co., Archts., Hill Bldg., ready for bids about April 15 for 3-story, 80x120 ft., conc. and brick business building, N. E. section; slag roof, steam heat.

La., Baton Rouge—Jahncke Service, Inc., Triad Bldg., has low bid at \$20,351 from Robert Thibodeaux for one-story, 141x83 ft., frame and stucco warehouse and office building, North Blvd. and S. 14th St.; brick and hollow tile work, cement floors, asbestos shingle roof; Weiss, Dreyfous & Seiferth, Archts., Maison Blanche Bldg., New Orleans. 3-12

N. C., Winston-Salem—W. M. and J. G. Thomas, both 515 S. Hawthorne Road, plan \$40,000, 284x186 ft., brick, conc. and steel tobacco sales warehouse.

BUILDING CONTRACTS AWARDED

las, for 3-story and basement bldg.; excavating.

City and County

Ala., Birmingham—Jefferson County voted \$1,500,000 bonds to complete interior and furnish \$3,250,000 court house and construct jail on top of structure; Holabird & Root, Archts., 333 N. Michigan Ave., Chicago, Ill.; Harry D. Wheelock, Asso. Archt., Steiner Bldg., Birmingham; Southern Ferro Concrete Co., Contr., Atlanta Trust Bldg., Atlanta, Ga. 2-19

Tex., Menard—Menard County Bd. of Commrs., J. W. Mathews, Judge, let contract at \$79,749 to E. D. Porter, San Angelo, for court house and jail; monolithic conc., 4 stories, face brick and tile, tile and cement floors, metal windows, metal lath; plumbing, heating and wiring in gen. contract; jail equipment; Withers & Thompson, Archts., 201 Holmes Bldg., Fort Worth. 2-5

Dwellings

D. C., Washington—Fred Schneider Co., Inc., 4502 13th St., N. W., has permit for 4 brick dwellings, 501-13 Peabody St., N. W.; 2 stories; \$10,000 each.

D. C., Washington—J. E. Fox, 4525 South Dakota Ave., N. E., has permit for 3 brick and tile dwellings, 4533-37 South Dakota Ave., N. E.; 2 stories; total \$16,500.

D. C., Washington—F. P. Williams, 1000 14th St., erect dwelling, 5516 Broad Branch Rd., after plans by Chas. E. Dillon; J. D. Miller, Contr., 123 Carroll Ave., N. W. 3-5

D. C., Washington—W. C. & A. N. Miller, 1119 17th St., N. W., have permit for stone dwelling, 4308 Forest Lane, N. E.; 3 stories; \$32,500; G. E. MacNeil, Archt.; owner builds.

D. C., Washington—District Construction Co., Inc., has permit for brick dwelling, 7604 14th St., N. W.; 2 stories; total \$10,000.

D. C., Washington—W. Walter Vaughn, 1013 Dull Place, N. E., has permit for 2 brick and cinder block dwellings, 1120 Urell Place and 4314 Twelfth St., N. E.; 2 stories; total \$14,000.

D. C., Washington—M. F. Landis, 2638 R. I. Ave., N. E., has permit for 2 brick and tile dwellings, 2232 Quincy and 3900 24th Sts., N. E.; 2 stories; total \$13,000.

D. C., Washington—W. H. Hoffman, 927 15th St., N. W., has permit for 5 brick dwellings, 1871-79 Ingleside Terrace, N. W.; 2 stories; total \$25,000.

D. C., Washington—J. R. Sherwood, care F. B. Fyle, Evans Bldg., let contract to T. T. Taylor Co., 504 Commercial Natl. Bank Bldg., for brick residence, 15th and Newton Sts., N. E.; 2½ stories, slate roof, kitchen equipment. 3-5

Fla., Coconut Grove, Miami—Becker Construction Co., 2123 Granada Blvd., Coral Gables, erect dwelling, garages, servants' quarters, etc.; Faist & Stewart, Archts., Ingraham Bldg., Miami.

Ga., Atlanta—W. B. Winn, 845 Virginia Ave., N. E., erect brick veneer residence, 1614 Beecher St., S. W.; 1 story, hardwood floors, comp. roof; day labor.

Ga., Atlanta—H. F. Anderson, care Herbert Kaiser Co., Citizens & Southern Bldg., erect 2 brick veneer dwellings, Highland Ave. and Rock Springs Rd.; 1 story and basement, hardwood and tile floors, comp. roofs; total \$16,500; day labor.

Ga., Atlanta—Jas. Willis, 47 Ashby St., S. W., erect frame residence, 184 Vanira St.; 1 story, comp. roof; day labor.

Ga., Atlanta—Prof. Harold Bush-Brown, 67 Peachtree Pl., let contract at \$15,000 to Christian & Bell, Red Rock Bldg., for brick veneer residence; 2 stories and basement 40x48 ft., oak, linoleum and tile floors, stoneware foundation, asphalt shingle hip roof, elect. refrigerator plaster board, steel sash and trim, hollow tile, ventilators; plans by owner. 2-5

La., New Orleans—J. W. Johnson, Contr., 2618 N. Roman St., erect shingle dwelling and garage, Lafayette St. near Mirabeau St.

La., New Orleans—Julian & Osborne, Contrs., 2412 Wistaria St., erect double dwelling; asbestos roof, sheet metal work.

La., New Orleans—Louis I. Ybos erect shingle residence, Verbona and Franklin Sts.; orna. iron, tile work, sheet metal work, asbestos roof; O. F. Harang, Contr., 6008 Catina St.

La., New Orleans—E. B. & I. M. Davis, 916 French St., erect double dwelling, 916 French; asbestos roof.

Md., Baltimore—Parkway Development Co., Jos. Meyerhoff, 1005 Munsey Bldg., erect 18 dwellings, Northern Pkwy., and 25 dwellings, Stoneleigh; soon ready for sub-bids; brick and stucco, 2 stories, about 25x30 ft.; owner builds.

Md., Baltimore—Jas. J. Brothers, 1710 E. Eager St., has plumbing contract for 12 dwellings, Paddington Rd., for Clifton K. Wells, Bldr., 3538 Old York Rd.; Palmer & Lambdin, Archts., 513 N. Charles St. 2-12

Md., Baltimore—Cleveland R. Bealmear, Bldr., 16 E. Lexington St., erect 17 brick and stucco cottages, Shelborne Rd.; 2½ stories, about 30x40 ft.; John R. Forsythe, Archt., 16 E. Lexington St.; work start in Spring.

Md., Baltimore—Frank W. Krebs, 2111 Belair Rd., erect 3 conc. block dwellings, Westfield Ave.; 1½ stories, 28x33 ft.; owner builds.

Md., Baltimore—Stanley W. Dennis, 34011 Duvall Ave., erect brick residence and garage, 409 Chapelgate Ave.; 2 stories, 39x33 ft. and 10x19 ft.; Sears, Roebuck & Co., Archt.-Contr., 810 N. Charles St.

Md., Baltimore—North Ashburton Development Co., 1623 Munsey Bldg., erect dwelling and garage, 802 Winan's Way; brick, 2½ stories, 29x25 ft. and 18x18 ft.; Geo. Wessel, Archt., 601 W. 40th St.; owner builds.

Md., Baltimore—Dr. Page Edmunds, University Hospital, erect residence, Gibson Island; shingle, 2½ stories, 6 rooms, 2 baths; Jos. D. Groh, Contr., Pasadena.

Md., Baltimore—Milton R. Lerch, Bldr., 5206 Harford Ave., erect 11 brick dwellings, and 14 conc. garages, 5200-20 Harford Ave.; 2 stories; total \$38,500.

Mo., St. Louis—Ellen M. Tucker, 3908 Parker St., erect 3 brick dwellings, 1406-14 Quincy St.; 1 story, 25x44 ft., comp. shingle roof, hot air heat; total \$10,000; E. J. Manche, Archt.-Contr., 3528 Arsenal St.

Mo., St. Louis—P. Geist, 5239 Nottingham St., erect 3 brick dwellings, 1307-15 Sharp St.; 1 story, 24x35 ft., comp. roof, hot air heat; total \$10,000; plans and constr. by owner.

Mo., University City, St. Louis—W. Glicker, 728 Yale St., erect two \$10,000 brick dwellings, 7348-56 Kingshighway Blvd.; 2 stories, 38x32 ft., rubble stone foundation, tile and slate roof, vapor heat; Russell Conzelman, Archt., 5030 Kingsbury.

Tex., Amarillo—Frank J. Storm, 112 E. Fifth St., erecting \$20,000 residence, 1710 Harrison St.; brick veneer, 1 story and part basement, 55x47 ft.; Parr Construction Co., Contr., 603 Tyler St.

Tex., Beaumont—Mrs. John L. Keith, 2188 North St., let contract to Sneed Construction Co., Goodhue Bldg., for \$25,000 residence, McKee Place; brick, 2 stories, tile roof, oak floors; Fred C. Stone, Archt., Goodhue Bldg. 1-8

Tex., Brownsville—Jose Garcia Vera erect frame residence, S. Van Buren St.; 1 story, pine floors, comp. roof; day labor.

Tex., Corpus Christi—Paul Cox, 519 Furman St., remodel residence; \$12,000; H. E. Woodruff, Contr., 602 Nixon Bldg.

Tex., Fort Worth—N. E. Roos, 1400 Washington St., erecting \$15,000 brick veneer residence, 1419 Washington St.; 2 stories and basement, 37x42 ft.; Bundock Building Co., Contr., 1813 Eighth St.

Tex., Fort Worth—A. Lundell, 2716 Willing St., considers erecting several dwellings, Arlington Heights; now erecting brick veneer dwellings, 4905 Pershing St. and 4900 Pershing; owner builds.

Tex., Fort Worth—Oakhurst Land Co., 2431 Carnation St., start work soon on brick veneer dwelling, 3712 Hamilton St.; 1 story, 6 rooms; Thos. McCormick, Contr., 2312 Yucca St.

Tex., Fort Worth—John C. Ryan, Jr., 2744 Fifth Ave., erecting \$12,000 brick veneer residence and garage, 2831 Sixth Ave.; brick veneer, 2 stories and basement, 37x39 ft., oak floors, wood shingle roof, pine finish, 2 tile baths; Stewart Moore, Archt., 709 Flatiron Bldg.; A. O. Bauer, Contr., 2733 Stewart Drive; framing.

Tex., Lockhart—R. F. Leyendecker let contract to W. C. Eads, Lockhart, for residence; Jeremiah Schmidt, Archt., New Braunfels. 12-11

Tex., Port Isabel—Dr. J. G. Williams, care Wm. D. Van Sicle, Archt., 502 State Natl. Bank Bldg., Brownsville, let contract to Bayview Construction Co., Port Isabel, for \$13,500 residence; handmade Mexican brick and rein. conc., Mission tile roof. 3-12

Va., Charlottesville—Dr. Edwin P. Lehman let contract at about \$25,500 to L. H. Harlan for residence; brick, 2½ stories, slate roof, casement windows, orna. iron; Marshall Swain Wells, Archt.

Va., Richmond—C. Fair Brooks let contract to Max Wetzel, 1519 Chamberlain Ave., for brick residence; cast stone, elect. refrigerators, hardwood, linoleum and tile floors, steel sash and trim, 2½ stories, 47x60 ft., brick foundation, slate roof; Henry T. Barnham, Archt., 819 E. Franklin St. 2-26

Va., Richmond—J. T. Lewis, Jr., care W. Duncan Lee, Archt., 210 E. Franklin St., let contract at \$24,000 to J. R. Jones & Conquest, Inc., Central Natl. Bank Bldg., for brick residence, Cory St. Rd.; 2 stories and full basement, 30x85 ft., 2-car garage, wide pine floors, brick and conc. foundation, hip slate roof, Kernerator. 3-12

Va., Virginia Beach—Geo. Watts Hill, Trust Bldg., Durham, N. C., erect \$25,000 residence; frame, 2 stories, 40x94 ft., 6 baths; Geo. Watts Carr, Archt., Forest Hill, Durham; contract let.

Government and State

D. C., Washington—Architect of The Capitol, David Lynn, will have plans ready by June 1 for superstructure of \$5,240,000 U. S. Supreme Court Bldg.; contract for foundation and excavation lately noted let to G. B. Mullin Co., Inc., 1296 Upshur St., N. W.; structure Corinthian type, 385x203 ft., central section 4 stories, west front 3 stories and remaining sections lower, fireproof, stone brick; Cass Gilbert, Archt., 244 Madison Ave., New York. 3-12

La., Baton Rouge—Candora Marble Co., Vestal St., Knoxville, Tenn., has contract for about \$350,000 of marble for \$5,000,000 State Capitol; Albert Weiblen Marble & Granite Co., New Orleans, La., to furnish part of above; Weiss, Dreyfous & Seiferth, Archts., Maison Blanche Bldg., New Orleans; Geo. A. Fuller Co., Contrs., Munsey Bldg., Washington, D. C., and Fuller Bldg., New York. 3-12

La., Barksdale Field, Shreveport—Constructing Quartermaster, Barksdale Field, Capt. Geo. E. Lamb, let contract at \$86,842 to Ashton Glassell Co., Inc., 260 Second St., Shreveport, for quartermaster warehouse, maintenance dept., warehouse and garage building. 2-19

N. C., Salisbury—Southern Engineering Co., Little Pittsburg, Charlotte, N. C., and Southern G-F Co., 263 Decatur St., S. E., Atlanta, Ga., for 150 tons struct. steel shapes and bars for \$175,000 extension and remodeling of post office; Grahm Construction Co., Contr., 215 Red Rock Bldg., Atlanta. 3-5

Okla., Frederick—Treasury Dept., Jas. A. Wetmore, Act. Supvy. Archt., Washington, D. C., let contract to Upchurch Construction Co., Bell Bldg., Montgomery, Ala., for \$57,000 post office; conc., stone and brick. 3-12

Tenn., Union City—Treasury Dept., Jas. A. Wetmore, Act. Supvy. Archt., Washington, D. C., let contract to Upchurch Construction

Co., 224 Bell Bldg., Montgomery, Ala., for remodeling and enlarging post office; about \$14,000; conc., stone and brick; work start at once. 3-12

Tex., San Antonio—Constructing Quartermaster, Normoyle Quartermaster Depot, Fort Sam Houston, let contract at \$164,350 to A. J. Rife Construction Co., 1913 N. Harwood St., Dallas, Tex., for barrack bldg. for 193 men, Camp Normoyle; rein. conc. and masonry, 210.60 ft. with 109x50 ft. wing, conc. and linoleum floors, rein. conc. foundation, tile roof. 3-5

Va., Fortress Monroe—Constructing Quartermaster let contract to Townsend Lumber Co., N. Towers St., Anderson, S. C., for \$120,000 bachelor officers' quarters, Fort Monroe; fireproof, brick, 3½ stories and attic, conc. floors, suspended ceilings, waterproofed conc. foundation, slate and built-up roof, cast stone, elect. refrigerators, elevators, linoleum and terrazzo floors, marble, metal ceilings, metal doors, steel sash and trim, hollow and interior tile, ventilators, wire glass, brass and bronze work. 3-12

Va., Langley Field, Hampton—Southern G. F. Co., 263 Decatur St., S. E., Atlanta, Ga., has contract for 700 tons rein. steel for 4 barrack bldgs., Langley Field; Batson-Cook, Co., Inc., Contr., West Point, Ga. 3-5

W. Va., Clarksburg—Additional sub-contracts let on \$425,000 post office and court house: Wood block flooring, Jenison Wright Co., Toledo, O.; cork flooring, David E. Kennedy, Inc., 10 N. Michigan Ave.; rolling doors, Majestic Iron Works, Inc., 3144 Maypole Ave.; mastic flooring, Thomas Moulding Floor Co.; architectural terra cotta, Northwestern Terra Cotta Co., 2525 Clyburne Ave., all Chicago, Ill.; orna. iron, Roanoke Iron Works, Inc., 321 Third St., S. E., Roanoke, Va.; painting, Shea-Mastiny Co., Cicero, Ill.; sheet metal and roofing, H. C. Smith Co., McKeesport, Pa.; waterproofing, R. E. Whitney Co., Union Bldg., Cleveland, O.; elect. wiring and fixtures, Workrite Electric Co., 444 W. Main St., Clarksburg; John Largura & Co., Gen. Contr., 2672 Adams St., Gary, Ind.; sub-contracts yet to be let on hardware, millwork, common and face brick and window sash putty work. 1-22

Hospitals, Sanitariums, Etc.

Ala., Mobile—Roman Catholic Diocese of Alabama and Northern Florida, Rt. Rev. T. J. Toolen, Bishop of Mobile, excavating for \$220,000 orphanage and maternity hospital, Bishop Allen Memorial Home; rein. conc., face brick and limestone, 3 stories, rein. conc. foundation, slate roof; furnishings, equipment, etc., \$30,000; Carey & Dowling, Archts., First Natl. Bk. Annex, have let all sub-contracts; plumbing and low pressure steam heating and high pressure steam for laundry and sterilizers let to Flynn Plumbing and Heating Co., 1007½ Springhill Ave.; elect. work, Wilson & Garner; excavating, rein. conc., masonry and carpentry to T. F. Dempsey Co., First Natl. Bank Annex; tile, marble and slate, Dagostin & Angelini Bros., Inc., 220 S. Royal St.; painting, Easterling Decorating Co., Powell Bldg. 1-8

Tex., Waco—United States Veterans Bureau, Arlington Bldg., Washington, D. C., let contract to Henry B. Ryan Co., 500 N. Dearborn St., Chicago, Ill., for \$1,500,000 U. S. Veterans Hospital; plumbing, heating and elect. work not let; work includes rein. conc. constr., hollow tile, brick work, cut stone, cast stone, architectural terra cotta, marble work, floor and wall tile, compressed asphalt tile an dlinoleum floors, terrazzo, iron work, steel sash, steel stairs with slate treads, steel shelving, cabinets and partitions, tile, metal and built-up roofing, roof ventilators, lightning conductor, metal lathing, metal weatherstrips, insect screens, window shades, nurses' call system, fire alarm system, boiler plant, radial brick chimney, elect. elevators, zeolite water softening system, refrigerating and ice making plant; administration bldg., 2 or 3 patients' bldgs., dining hall, kitchen, laundry, garage, storehouse, recreation hall and quarters for 12 to 15 doctors, 50 nurses, dietitians and 100 other attendants, residences for supt. and other officials; main bldg. H shape, 4 stories, brick; others 2 stories, all fireproof, indoor swimming pool. 3-5

Hotels and Apartments

D. C., Washington—Hudson-Dougherty Co., Seventh and T Sts., N. E., has contract for 200 tons rein. steel for \$350,000, 7-story, brick, conc. and stone apartment, Randolph St., N. W., near 14th St.; Geo. T. Santmyers, Archt., 1416 Eye St., N. W. 2-19

D. C., Washington—Capital Fireproof Products Corp., has contract for 200 tons rein. steel for \$350,000, 12-story store and apartment, 2150 Pennsylvania Ave., N. W., for Baer & Scholz; Robt. O. Scholz, Archt., both Edmonds Bldg. 2-12

Fla., Miami Beach—Arkay Holding Co., 1568 Drexel Ave., erect \$15,000, 2-story, rein. conc., conc. block and stucco, 4-apartment on Drexel Ave. between 15th and 16th Sts.; Robt. L. Weed, Archt., 2620 Biscayne Blvd., Miami; B. Reisner, Contr.

Fla., Miami Beach—Saranal, Inc., A. Czech, Pres., Olympia Bldg., Miami, started work on \$25,000, 3-story, rein. conc., conc. block and stucco 10-apartment, Drexel Ave. between 15th and 16th Sts.; owner builds by day labor; Henry E. Keller, Supt. of construction; work started.

Fla., Miami—Martha and Charles Meyers, 927 Fourth St., plan \$20,000, 2-story, rein. conc., conc. block and stucco, 10-apartment, Pennsylvania Ave. and Eighth St.; owners prob. build.

Ga., Macon—Carolina Steel & Iron Co., S. Elm St., Greensboro, N. C., has contract for 257 tons struc. steel for 9-story and basement, 140-room addition to Hotel Dempsey, for which Angle-Blackford Co., Am. Natl. Bank Bldg., Greensboro, has general contract.

N. C., Charlotte—Central Hotel, Whit Brown, S. Tryon St., let contract to J. P. Propst, 21 E. Sixth St., for \$30,000 improvements to hotel; 125 rooms; change name to Albert Hotel.

Okla., Oklahoma City—Leo Saunders, Tradesman's Natl. Bank Bldg., has contract for excavation for \$2,500,000, 26-story Skirvin Tower for which Campbell & Price, 6605½ W. Main St., have general contract; Layton, Hicks & Forsythe, Archts., Braniff Bldg.; Skirvin Operating Co., O. W. Skirvin, V.-P., Proprs.; financed by J. W. Colvin, Democratic Bldg., Houston, Tex., and Mrs. George Mesta, New York, daughter of W. B. Skirvin.

Tex., Amarillo—C. W. Bott, care Reppert Lumber Co., Contr., 2610 W. 6th St., erect \$15,000, 2-story, brick apartment.

Tex., Dallas—Eagle Building Co., care E. C. Smith & Sons, Archts., Construction Industries Bldg., soon start work on 2-story and basement, 85x110 ft., brick veneer, 16-apartment, Wycliff Ave. near Preston Road; Spanish tile roof.

Tex., Fort Worth—Mrs. Grace Burroughs, 3201 Cockrell Ave., erecting (framing complete) 2-story, 38x65½ ft., brick veneer apartment, 3308-10 University Drive, Bluebonnet Hills addition; tile and oak floors, Kingsbury asphalt roof, electric refrigerators, incinerators, mail chutes; C. A. Emery, 3246 University Drive, has contract at \$17,486; J. B. Atkinson, Archt., 3121 Cockrell Ave.; Knox B. Hawthorne, Engr., 514 W. Third St.

Tex., Houston—Mrs. Maude Geiselman, 2706 Crocker St., erecting (foundation completed) \$10,500, 2-story, 33x60 ft., brick veneer apartment, 1718 Wentworth St.; asbestos shingle roof, oak floors, gas steam heat; C. C. Rouse, Contr., Bankers Mortgage Bldg.

Tex., Longview—Longview Hotel Co., Judge Franklin Cannady, Trustee, Medical Arts Bldg., Galveston, reported, let contract to Dee Humphreys Construction Co., Longview, and Burt Bldg., Dallas, for brick, tile, struc. steel and rein. conc., 140-room hotel; Andrew Fraser, Archt., Am. Natl. Insurance Bldg., Galveston.

Tex., Henderson—Henderson Hotel Co., Floyd H. Hodges, 660 Stoner Ave., and Jack Tullos, Youree Hotel, both Shreveport, La., and G. W. James, El Dorado, Ark., let contract to Dee Humphreys Construction Co., Burt Bldg., Dallas, to remodel Randolph Hotel and erect 36-room annex; Jones, Roessle, Olschner & Weiner, Archts., Ardis Bldg., Shreveport, La.

Miscellaneous

Md., Kingsville—St. Stephen's Roman Catholic Church excavating for 2-story, 36x36 ft., 2-story, hollow tile and stucco convent; George B. Monmonier, Contr.

Mo., St. Louis—Baden Recreation Alley, Inc., 8009-11 N. Broadway, erect \$12,000, 2-story, 51x149 ft., brick store and recreation building; tar roof steam heat; Fred L. Blake, Bldr., 1062 Wall St.; Otto J. Kreig, Archt., Wainwright Bldg.

Tex., Goliad—S. T. Dial erect one-story, 30x50 ft., tile, stucco and rein. conc. funeral home; owner builds; sub-bids to be submitted to Woodward & Hardie, 230 Seguin St., San Antonio.

Railway Stations, Sheds, Etc.

S. C., Charleston—Seaboard Air Line Ry., W. D. Faucette, Ch. Engr., Norfolk, Va., let contract to Wadesboro Construction Co.,

Wadesboro, N. C., for passenger station; 57x21 ft. with 115 ft. butterfly shed 18 ft. wide; stucco.

Schools

Ala., Cullman—Sacred Heart Academy let contract at about \$10,000 to Smallman Construction Co., 1109 S. 5th Ave., Birmingham, to complete \$65,000, 2-story, 131x55 ft., brick and struc. steel school building and chapel; steam heat; Carey & Dowling, Archts., First Natl. Bank Annex, Mobile.

Fla., Lemon City, Miami—Dade County Bd. of Public Instruction, James J. Marshall, Chmn., Miami, let contract at \$76,700 to St. John Construction Co., 629 N. W. 7th St., Miami, for auditorium at Dade County Agricultural High School; struc. steel, \$18,870, Bristol Steel & Iron Works, Bristol, Va.-Tenn.; electrical, \$9975, J. C. Willis, 1342 N. W. 8th Court; plumbing, \$2400, Chas. M. Ewing, Coral Gables, let contract at \$22,331 to O'Neill-Orr Construction Co., 212 N. E. Fourth St., for cafeteria; electrical, Geo. LaVigne & Co., Calumet Bldg.; plumbing, Alexander Orr, Jr., Inc., 45 N. W. Third St.; Geo. L. Pfeiffer, Archt., Biscayne Bank Bldg.; E. L. Robertson, Asso. Archt., Calumet Bldg.; L. B. Taylor, Struc. Engr., Congress Bldg., Miami.

Ga., Atlanta—Bd. of Education, R. R. Ritchie, Asst. Supt., City Hall, erect following additions to schools, work by day labor: East Lake School, \$7500, brick, comp. roof; Tech High School, \$4000, 4 rooms, frame, portable; Bankhead Ave. School, \$2000, frame, portable; Rocksprings Road School, \$6300, brick; School, 448 Gray St., \$3000 addition.

La., Plaquemine—Iberville Parish School Bd., L. P. Terrebonne, Sec., let contract at \$58,497 to G. L. Whitaker & Son, Tylertown, Miss., for 2-story, rein. conc., brick, stone trim high school; Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans.

La., Thibodaux—Lafourche Parish School Bd., let contract at \$31,165 to Sidney Toups for frame school at Choctaw.

Mo., Clayton, St. Louis—Bd. of Education, J. J. Bracken, Supt., 7500 Maryland Ave., let following contracts for improvements to and erecting 2-story and basement, rein. conc. and brick addition to Glenridge School; Fleischer Investment & Construction Co., Ry. Exch. Bldg., general contract at \$71,640; plumbing, \$6035, W. L. Lucas & Co., One N. Grand Blvd.; heating, \$14,507, Elliott & Barr Engineering Co., 4060 W. Pine St.; electric, \$5004, H. P. Faig Electric Co., 2804 N. 11th St.; let following contracts for improvements and 2-story and basement, rein. conc. and brick addition to Bellevue School; Fleischer Investment & Construction Co., general contract at \$65,992; plumbing, \$6680, C. O. Smith Plumbing Co., 4025 Forest Park Blvd.; heating, \$12,073, St. Louis Engineering & Heating Co., 1417 Olive St.; electric, \$4626, H. P. Faig Electric Co., 2804 N. 11th St.; Wm. B. Iltner, Inc., Archt., Continental Life Bldg., all St. Louis.

N. C., Greensboro—Immanuel Lutheran College, Rev. Henry Nau, Pres., let contract to Moser & Burges for repairs to classroom building; also let contract to Crutchfield-Sullivan Co. for improvements to heating plant; work under supervision of Harry Barton, Archt., Jefferson Bldg., who is drawing plans for remodeling main building; total cost \$40,000.

Tex., Fort Stockton—School Bd., H. H. Butz, Pres., let contract at \$75,910 to C. S. Oates & Son, Abilene, for 3-story, 197x92 ft., brick, tile, struc. steel and rein. conc. high school; heating and plumbing, \$11,800 Vickers Plumbing & Heating Co., Sweetwater; electric work, \$2526, W. C. McHorse, Coleman; comp. wood, terrazzo and tile floors, cast stone trim; David S. Castle, Archt., Alexander Bldg., Abilene.

Tex., Huntsville—Huntsville Ind. School Dist., C. N. Shaver, Sec., let contract at \$87,500 to J. E. Johnson Construction Co., 1000 Franklin Ave., Waco, for brick, tile and rein. conc. Jr.-Sr. High School; Harry D. Payne, Archt., Kirby Bldg., Houston.

Tex., Ozona—Following sub-contracts awarded on 3-story, brick and native stone high school under construction for Crockett County Common School Dist. for which Anderson Brothers Construction Co., 500 N. Cotton Ave., El Paso, has general contract at \$137,690: Struc. steel, misc. and orna. iron, Central Texas Iron Works, 2125 Webster Ave., Waco; millwork, Steves Sash & Door Co., 100 S. Adams St., Fort Worth; roofing, Probst Roofing Co., San Angelo; Peters, Strange & Bradshaw, Archts., Lubbock.

Stores

Ala., Birmingham—S. Rich Estate, care H. B. Wheelock, Archt., Steiner Bldg., let contract to Mann Bros., 2519 N. 10th Ave., for improvements to store, 2021 N. Second Ave.; \$20,000; R. B. Broyles Furniture Co., Lessee.

Ga., Atlanta—Moe Goldman, 1755 N. Decatur Road, N. E., erect one-story, brick, stone trim, 5-store building, Clifton Road N. Decatur Road; stone trim, tar and gravel roof, day labor.

Ga., Atlanta—W. H. Simmons, 76 Jackson St., S. E., erect 2-story, brick store and apartment, Auburn Ave. near Butler St., N. E.; comp. roof, wood floors; Alex. Hamilton, Contr., 102 Howell St., N. E.

Md., Baltimore—John E. Miles, 545 W. Hamburg St., let contract to W. Scott Staniford, 5311 Windsor Mill Road, for one-story, brick store, 2448 Washington Blvd.

Md., Baltimore—Joseph Millinusk, soon start work on one-story, brick store and apartment, 3923 Belair Road; Harry H. Gunther, 4020 Biddison Lane, prob. Bldr.

Tex., Austin—J. O. Buas & Son, 407 Lavaca St., have contract for roofing and sheet metal work and C. J. Sutton, 2308 Granbery St., Fort Worth, plastering for 3-story and basement addition to building, Congress and 6th Sts., for Scarbrough & Son for which James T. Taylor, Aviation Bldg., Fort Worth, has general contract at \$243,035; Wyatt C. Hedrick, First Natl. Bank Bldg., Fort Worth, and Edwin C. Kreisler, Scarbrough Bldg., Austin, Asso. Archts.

Tex., Dallas—W. S. McLemore, 306 S. Jefferson St., started work on improvements to 2-story, 50x90 ft., conc. and steel business building, Wood and St. Paul Sts.; Chambers & Chambers, Contrs., 1214 N. Clinton Ave.; F. J. Woerner & Co., Archts., Central Bank Bldg.

Tex., Fort Worth—J. A. McAdams, 2920 Noble St., erecting (foundation in) \$14,000, one-story, brick and tile store, 3126 Belknap St.; R. E. Goddard, 605 N. Frey St., Contr.

Tex., Laveria—Paul Vorphal, care Olin Boese, Archt., Builders Exchange Bldg., San Antonio, started work on one-story, 33x56 ft., conc., tile and stucco store.

Tex., Port Isabel—Samuel Woolston, Port Isabel Yacht Club, excavating for one-story, brick, rein. conc. and hollow tile, 6-storeroom building, Powers and Tarnava Sts.; cast stone trim, built-up roof, conc. and tile floors; H. J. Roege, Contr., Los Fresnos.

Tex., Somerset—Owner, care Olin Boese, Archt., Builders Exchange Bldg., San Antonio, erect one-story, 50x70 ft., rein. conc. and brick store; owner builds.

Theatres

Tex., Dallas—Ro-Nile Theater, care J. B. Salmon, 3220 Knox St., started work on remodeling theater; W. Scott Dunne, Archt., Melba Bldg.

Tex., Kilgore—Roy H. Laird started work on \$25,000, 2-story, fireproof office and theater building; 10,000 ft. floor space.

Warehouses

Ala., Montgomery—J. W. Jamison, Coosa St., erect \$15,000, one-story, 100x150 ft., brick and steel warehouse; R. G. Brasse, Contr., 8 S. Ryan St.

D. C., Washington—Palais Royal, A. C. Case, Mgr., 11th and G Sts., N. W., let contract to George A. Fuller Co., Munsey Bldg., for 4-story, 250x150 ft., rein. conc., brick and hollow tile warehouse, First St. between L and M Sts., N. E.; electric elevators, built-up roof, skylights, automatic sprinklers; Abbott Merkt Co., Archt., 175 Fifth Ave., New York; F. B. Pyle, Supvg. Engr., Evans Bldg.

Md., Baltimore—Howard H. Houston let contract to Frairie Bros., 19 W. Franklin St., for \$15,000 fire repairs to warehouse, 9-15 W. Lombard St.; 4 stories, brick.

Md., Baltimore—G. Frank Young (plumbing supplies), 424 N. Gay St., let contract to Avon Construction Co., 216 E. Lexington St., for \$15,000 alterations to warehouse, Monument St. and Harford Road; Kubitz & Koenig, Archts., Hearst Tower Bldg.

Okla., Oklahoma City—Nash Finch Co., 320 W. Second St., erecting \$70,000, 2-story and basement warehouse on Santa Fe R. F. land, 1501 N. Oklahoma St.; Charles M. Dunning Construction Co., Contr., 420½ N. Judson St.

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Canning Plant Equipment, etc.—T. E. Carpenter, Contractor, Weslaco, Tex.—Wants prices and data from manufacturers on canning plant equipment layout.

Dryers (Rotary).—Alex M. Robinson (Mchy. Dealer), Smithfield, Ky.—Wants prices and specifications on several rotary steam heat dryers, not less than 6 ft. diam. or as large as 8 ft. diam., used; requests prices f. o. b. cars shipping point.

Pump (Deep Well).—Spoon & Lewis, Engineers, Jefferson Bldg., Greensboro, N. C.—Wants quotations on new deep well pump for Town of Jonesboro, N. C.

Tool Handle Making Machinery.—E. T. Earnest, Eunice, La.—Wants prices and data on axe and hammer handle manufacturing machinery.

B. V. Hedrick Gravel & Sand Co., Lilesville, N. C.—Wants prices and data on following:

- (1) **Clamshell Bucket**—5 yd.
- (2) **Derrick**—150 ft., steel, complete with guy ropes
- (3) **Shafting**—2 15/16 in., in 20 to 25 ft. lengths.

Dept. of Commerce, Bureau of Standards, Washington, D. C., will have plans and specifications available in about a week for following equipment to be installed into substructure of National Hydraulic Laboratory for which bids will be opened March 23:

- (1) **Expanders**—cast iron for 30-in., 36-in. and 42-in. pump
- (2) **Flap Valves**—for 30-in., 36-in. and 42-in. pump
- (3) **Pipe (Welded Steel)**—lengths of pipe including bends 8 ft. and 3 ft. in diam.
- (4) **Wall Castings**—for sluice gates of various sizes from 16-in. square up to 8-ft. square.

E. W. Cooper, Engr., 2104 Eastland Ave., Nashville, Tenn.—Wants prices and data on following:

- (1) **Boiler (Steam)**—h. r. t. type, complete with fittings and supports, stack if available, for use in city, and to pass casualty insurance company inspection.
- (2) **Conveyor Outfit (Belt)**—troughing type, belt 36 in. wide, conveyor, from center to center, 500 ft. long; will consider shorter lengths; can use conveyor parts without belt; wants quotations on steel frame for conveyor
- (3) **Engine (Steam)**—40 to 60 h. p., automatic type, suitable for operating generator via belt drive from engine shaft
- (4) **Swinging Engine (Steam)**—to handle swinging of stiff leg derrick in clamshell work; swinger to have cylinders 6"x8 or larger, and to be complete and ready for operation; no boiler required.

Guyan Machine Shops, Lagon, W. Va.—wants prices on following:

- (1) **Crane**—about 5 ton capacity, locomotive type, electrically or gasoline operated
- (2) **Motors**—a. c., 220-440 volts, 3 phase, 60 cycle, 5 h. p. to 100 h. p.
- (3) **Punch and Shear**—Buffalo Iron Worker or Pels
- (4) **Transformers**—5 and 7½ kv-a, 6600 to 110-220 volts, 60 cycle
- (5) **Welding Machine**—200 to 300 ampere, gasoline driven.

M. K. Frank, 220 E. 42nd St., New York—Wants prices and data on following, f. o. b. Hagerstown, Md.:

- (1) **Generator**—direct connected, with switchboard, horsepower range, minimum 150, maximum 300, 3 phase, 60 cycle, 200 volts
- (2) **Pile Driver (Steam)**—used.

B. V. Hedrick Gravel and Sand Co., Lilesville, N. C.—Wants prices on following:

- (1) **Diesel Power Plants**
- (2) **Derricks**
- (3) **Screens**—and other machinery.

Sewage Disposal Plant.—Judge J. A. Stallcup, Charles Birnbaum and Hamp Williams, Commrs., Hot Springs, Ark., interested in formation of Improvement District and wants data and prices on central sewage disposal plant for population of 35,000 to cost \$450,000.

Water Pipe.—The de la Howe State School, J. B. Branch, Supt., McCormick, S. C.—Wants quotations on 3000 ft. used; 6-in. cast iron water main.

Miscellaneous

Filing Case Rods.—English Construction Co., Inc., 1315 H St., N. W., Washington, D. C.—Wants prices and data from manufacturers of filing case rods, having bronze or brass knobs on outside, for holding separators.

Fish Hooks.—A. Kirkland & Son, 1012 S. Howard Ave., Tampa, Fla.—Wants prices and data from American manufacturers of fish hooks.

Lead Strip.—Stoke Oil Co., H. F. Stoke, Roanoke, Va.—Wants prices and data on small quantity of lead strip, such as is used in leaded glass windows.

Pipe (Cast Iron).—Alex M. Robinson (Mchy. Dealer), Smithfield, Ky.—Wants prices and data on B&S cast iron pipe, class A, B or C, in 4, 6 and 12 inch, used, good condition.

Spools.—C. L. Upchurch & Sons, 514 Southern Mutual Bldg., Athens, Ga.—Wants prices and data from manufacturers of spools for different style tie tapes and jacquard lacing, 1000 yd. to the spool.

Tin Cans.—David J. Hefferman, 610 Court House, Miami, Fla.—Wants prices and data on tin cans, such as are used for tooth powder, boric acid, etc.

Building Material and Equipment

Shingles (Spanish Tile).—Arthur Drerup, Portageville, Mo.—Wants prices and data on Spanish tile shingles, both in cement and metal.

Babin & Neff, Archts., Perlstein Bldg., Beaumont, Tex.—wants prices on following for \$85,000 shop and office building for W. W. Kyle:

- Dumb Walters
- Flooring—terrazzo, tile
- Limestone
- Roofing—built-up
- Steel Sash and Trim
- Terra Cotta Trim
- Brass and Bronze Work.

Guyan Machine Shops, Logan, W. Va.—wants prices on following:

Building—steel, about 40x60 ft., for machine shops.

O. T. Hennessee, 936 Juniper St., Atlanta, Ga.—wants prices on following for \$35,000 apartment:

- Electric Refrigerators
- Flooring—hardwood, linoleum, tile
- Roofing (hip)—asbestos and asphalt shingle, slate, tile
- Tile—hollow.

School Bd., E. A. Armin, Jr., Pres., Flaton, Texas.—wants prices on equipment for 4-room and auditorium high school, including wood stoves and jackets; type of equipment not determined; to be purchased during next few months.

H. Ray Burkes, 702 Wallace Bldg., Little Rock, Ark.—wants prices on following for court house, Russellville, Ark.:

- Cast Stone
- Elevators
- Limestone
- Marble
- Metal Doors
- Roofing (flat)—built-up
- Steel Sash and Trim
- Tile—interior
- Vaults
- Brass and Bronze Work

Bids Asked

Ambulances and Motor Trucks.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Mar. 24 for motor ambulances and motor trucks to Naval Academy, Annapolis, Md.

Barge (Steel).—U. S. Engr. Office, First Dist., New Orleans, La.—Bids Apr. 10 for 80x26x5-ft. steel oil barge.

Athletic Field Improvement.—Lake Charles School Bd., Floyd Hamilton, Pres., Lake Charles, La.—Bids Mar. 30 for improving high school athletic field, 200 cu. yd. excavation, 500 cu. yd. hauled embankment, 1150 lin. ft. 6-in. conc. tile in place and back filled; F. Shutts & Sons, Engrs., Lake Charles.

Auto Supplies.—General Supply Committee, Washington, D. C.—Bids Apr. 8 for automobile supplies and accessories for fiscal year 1932.

Bathing Suits and Towels.—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids Mar. 26 for bathing suits and towels, under separate contracts, for park pools.

Bakery Equipment.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 26 for flour handling and sifting outfit, 2 steel dough troughs, delivery Sewall's Point, Va.

Band Saw Machine (Metal Cutting).—See Miscellaneous Machinery and Tools.

Boots (Rubber).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 25 for 1600 pairs rubber boots, delivery Philadelphia, Pa.

Boring, Drilling and Milling Machine.—See Miscellaneous Machinery and Tools.

Bridge.—Kentucky. See Roads, Streets and Paving.

Bridges.—State of Georgia—Bids for 6 Bridges. See Construction News—Roads, Streets and Paving.

Bridges.—State of Virginia—Bids for 3 bridges. See Construction News—Roads, Streets and Paving.

Bridge.—Washington, D. C. See Construction News—Roads, Streets and Paving.

Building Materials.—Arkansas Construction Comsn., Jos. M. Hill, Chmn., State Capitol, Little Rock, Ark.—Bids Mar. 26 for following materials and work for State Hospital for Nervous Diseases, Saline County: Portland cement, second unit; face and common brick, second unit; hollow tile, second unit; refrigerating equipment, units 1, 2 and 8.

Case Lighting.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids Apr. 9 for case lighting for Internal Revenue file cases in Bureau of Internal Revenue building.

Chlorine (Liquid).—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids Mar. 25 for 500,000 lb. liquid chlorine for Water Bureau.

Cloth (Leather).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 24 for 450 yd. leather cloth, delivery Philadelphia, Pa.

Cotton Goods.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 31 for cotton goods, delivery Philadelphia, Pa.

Courthouse and Jail Equipment.—Jefferson County Courthouse Comsn., H. S. Salmon, Sec., Birmingham, Ala.—Bids Apr. 15 for following in connection with construction and furnishing of courthouse and jail: wood and metal furniture, laundry equipment, kitchen equipment, cafeteria equipment, beds for infirmary and dormitories.

Crusher Plant.—Ch. of Engineers, U. S. Army, Washington, D. C.—Bids Mar. 26 for portable rock crusher plant, 10-ton capacity.

Cylinder Grinder.—See Miscellaneous Machinery and Tools.

Drill.—See Miscellaneous Machinery and Tools.

Dredging.—U. S. Engr. Office, Jacksonville, Fla.—Bids Apr. 3 for dredging approx. 175,000 cu. yd., Caloosahatchee-Lake Okeechobee Canal, Fla. See Construction News—Miscellaneous Construction.

Dredging.—U. S. Engr. Office, Montgomery, Ala.—Bids Mar. 31 for dredging channel from Pensacola Bay through Big Lagoon, thence across neck of land separating Big Lagoon from Old River, thence to mouth of Portage Creek, 783,000 cu. yd., place measurement.

Dredge (Pipe Line).—U. S. Engr. Office, P. O. Box 667, Vicksburg, Miss.—Bids Apr. 28 for constructing and delivering afloat at Vicksburg 16-in. self-propelled pile line dredge complete.

Buckles and Loops.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 25 for 25,000 combination buckles and loops, delivery Philadelphia, Pa.

Duck (White).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 26 for 2000 yd. white duck, delivery Philadelphia, Pa.

Electric Fans.—Commanding Officer, Washington Quartermaster Depot, 20th and C st., N. W., Washington, D. C.—Bids Mar. 23 for electric fans.

Electric Lamps.—General Supply Committee, Washington, D. C.—Bids Apr. 8 for annual supply of incandescent electric lamps, class 15.

Flannel (Canton).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 25 for 30,000 yd. Canton flannel delivery Philadelphia, Pa.

Floating Plant Repairs.—U. S. Engr. Office, Huntington, W. Va.—Bids Mar. 31 for docking and repairing floating plant.

Furniture and Floor Covering.—General Supply Committee, Washington, D. C.—Bids Apr. 8 for annual supply of furniture and floor covering, including office furniture and filing devices of all kinds, carpets, rugs, linings, linoleum, etc.

Hardware.—Office of Architect of Capitol, Washington, D. C.—Bids Mar. 24 for hardware for Senate office building.

Grading.—Office of Arlington Memorial Bridge Comsn., Washington, D. C.—Bids Apr. 1 for grading 56,000 cu. yd. material at Arlington Memorial Bridge.

Hand Drills and Screwdrivers (Electric).—See Miscellaneous Machinery and Tools.

Incinerator.—Constructing Quartermaster, Randolph Field, Tex.—Bids Apr. 6 for incinerator.

Laboratory Equipment.—Comms., D. C., Washington, D. C.—Bids Mar. 31 for 194 items of laboratory equipment.

Levee and Dike.—Bd. of Comms., 19th Louisiana Levee Dist., Natchitoches, La.—Bids Apr. 1 for 55,000 cu. yd., East Point New Levee and 14,000 cu. yd., Alligator Bayou Dike. See Construction News—Miscellaneous Construction.

Levee and Canal Work.—Bd. of State Engrs., D. C. Daniel, Sec., New Court Bldg., New Orleans, La.—Bids Mar. 31 for 27,000 cu. yd., Reid-Bedford Diversion Canal and 10,000 cu. yd. Grand Bend New Levee. See Construction News—Miscellaneous Construction.

Lighting Fixtures.—Commanding Officer, Washington Quartermaster Depot, Washington, D. C.—Bids Apr. 2 for electric lighting fixtures.

Lumber, etc.—General Supply Committee, Washington, D. C.—Bids Apr. 8 for annual supply of lumber, etc., including lumber, millwork, excelsior, packing boxes, building materials, roofing supplies, tin plate, wall-board, stone, slag, tar, road oil, asphalt, etc.

Metal Work.—Supt. of Lighthouses, Key West, Fla.—Bids Mar. 31 for metal work for 9 iron towers.

Miscellaneous Machinery and Tools.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Mar. 24 for wood-working machine; bids Mar. 31 for electric hand drills and screwdrivers; motor driven bench and emery grinders; motor driven, horizontal, cylindrical grinder; riveting hammers and squeeze type riveters, both pneumatic; motor driven, universal metal cutting band saw machine; motor driven sensitive drill.

Miscellaneous Machinery and Tools.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Mar. 31 for motor driven, single surfacer; motor driven bumping hammers; bids Apr. 7 for motor driven cylinder grinder; electric tenoner; pile threading and cutting machine.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Mar. 27 for following, Sch. 2636:

Motor vehicles, fire extinguishing outfits, tire-inflating machines, water coolers, sprayers, grindstone frame, metal roofing, pipe, range boilers, sanitary fixtures, etc.

Miscellaneous Machinery and Tools.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Mar. 24 for motor driven, horizontal boring, drilling and milling machine; bids Mar. 31 for motor driven

hack saw, and motor driven, power squaring shear.

Motor Trucks.—U. S. Engr. Office, Huntington, W. Va.—Bids Mar. 23 for light motor trucks, express body of not less than 1500 lb. capacity.

Painting, Waterproofing, etc.—S. L. Christian, Medical Officer in charge, Custodian, U. S. Marine Hospital, Norfolk, Va.—Bids Mar. 26 for interior and exterior painting, waterproofing, etc., including main hospital, east wing, nurses' home, attendants' quarters, laundry, boiler house and garage.

Pipe (Concrete or Cast Iron).—See Water Works.

Pipe Threading and Cutting Machine.—See Miscellaneous Machinery and Tools.

Polish (Metal).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 24 for 18,000 cans metal liquid polish, delivery Philadelphia, Pa.

Pontoons (Steel).—U. S. Engr. Office, St. Louis, Mo.—Bids Mar. 25 for 14 steel dredge pontoons.

Pump (Deep Well), etc.—U. S. Veterans Bureau, Construction Div., Arlington Bldg., Washington, D. C.—Bids Apr. 7 for deep well pump and enclosure, at U. S. veterans hospital, Alexandria, La.

Reconditioning Vessel.—War Dept., Washington Quartermaster Depot, Washington, D. C.—Bids Mar. 24 for reconditioning U. S. Army vessel "Enterprise."

Riveting Hammers and Riveters.—See Miscellaneous Machinery and Tools.

Road.—Florida. See Construction News—Roads, Streets and Paving.

Roads.—State of Maryland—Bids for 6 roads. See Construction News—Roads, Streets and Paving.

Roads.—State of Georgia—Bids for 2 roads. See Construction News—Roads Streets and Paving.

Roads.—State of Kentucky—Bids for 4 roads. See Construction News—Roads, Streets and Paving.

Road.—Fort Monroe. See Construction News—Roads, Streets and Paving.

Roads.—State of Virginia—Bids for 6 roads. See Construction News—Roads, Streets and Paving.

School Furniture, Equipment, etc.—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids Mar. 26 for miscellaneous furniture, equipment and supplies for various schools for Dept. of Education.

Squaring Shear (Power).—See Miscellaneous Machinery and Tools.

Steam Distribution System.—Office of David Lynn, Archt. of the Capitol, Washington, D. C.—Bids April 9 for steam distribution system to be installed, from Capitol Power plant, E St. between New Jersey Ave. and S Capitol St., S. E., to certain Government buildings adjacent to the Capitol including conc. ducts, tunnels, etc.

Street.—St. Louis, Mo. See Construction News—Roads, Streets and Paving.

Streets.—Baltimore, Md. See Roads, Streets and Paving.

Surfacer.—See Miscellaneous Machinery and Tools.

Tenoner (Electric).—See Miscellaneous Machinery and Tools.

Truck Parts.—Pur. and Contracting Officer, Holabird Q. M. Depot, Baltimore, Md.—Bids Apr. 10 for material for manufacture of 1½-ton, 4-wheel drive truck chassis parts.

Tunnel.—Office of Arlington Memorial Bridge Comsn., Washington, D. C.—Bids Apr. 8 for tunnel under Memorial Ave. at west end of Memorial Bridge.

Water Works.—Dist. Comms., Washington, D. C.—Bids March 23 for constructing 282 ft. of 30-in., 3755 ft. of 36-in. and 2450 ft. of 46-in. water main; concrete or cast iron; information on application Room 427, District Bldg.

Woodworking Machine.—See Miscellaneous Machinery and Tools.

Water Coolers and Drinking Fountains.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Mar. 27 for 15 combination water coolers and drinking fountains, delivery Philadelphia, Pa.

Trade Literature

Economy in Bridge Design.—The American Institute of Steel Construction, Inc., New York, is distributing a booklet, "True Economy in Highway Bridge Design," by T. W. Dodd, president of the St. Joseph Structural Steel Co., St. Joseph, Mo., with a discussion by J. E. Greiner of the J. E. Greiner Co., consulting engineers, Baltimore. The publication is based on a paper delivered at the eighth annual convention of the American Institute of Steel Construction, at Pinehurst, N. C., October 29, 1930, the purpose of which was to point out "economies which may be brought about in building highway bridges by means of better analyses of the economic and engineering factors involved."

Chain Belt Equipment.—The Chain Belt Company, Milwaukee, Wis., has issued three new construction equipment catalogs illustrating and describing Rex chain belt equipment. Catalog No. 204 deals with Rex building mixers, pumps, saw rigs, plaster and mortar mixers; catalog No. 206, with the Rex Champion paving and road pump for 1931, and catalog No. 205 with Rex Moto mixers for dry plants, Rex Moto removers for shrinkage plants and Rex Moto agitators for wet plants. The last named publication also contains engineering data on Rex elevators and Rex Stearns belt conveyors for concrete factories of all types.

American Chain Products.—The American Chain Company, Inc., Bridgeport, Conn., has issued a pocket size booklet presenting a list of products made by the company and its associate companies, including American Cable Co., Inc., New York; Andrew C. Campbell, Inc., Bridgeport; Ford Chain Block Co., Philadelphia; Hazard Wire Rope Co., Wilkes Barre, Pa.; Highland Iron and Steel Co., Terre Haute, Ind.; Manley Manufacturing Co., York, Pa.; Page Steel and Wire Co., New York; Pratt & Cady Co., Hartford, Conn.; Reading Steel Casting Co., Inc., Bridgeport; Wright Manufacturing Co., Bridgeport, and others.

Wood Block Flooring

Evante flooring blocks, a new product, have been placed on the market by the National Wood Products Company, recently organized subsidiary of the Evans Auto Loading Company, Detroit, Mich. The blocks are manufactured at the company's plant in Howard City, Mich., with a capacity of 2,000,000 feet annually, and are designed for domestic, commercial and industrial purposes. Standard sizes are 6 by 12 inches, 9 by 9 inches, 6 by 6 inches and 12 by 12 inches, with standard thickness of 25/32 of an inch, and they may be had up to 1 1/16 inches. The blocks are available in oak, maple, beech and birch, milled from air and kiln dried selected wood and treated with transparent Pen-O-Treat wood preservative said to prevent fungus growth, decomposition and attacks from insects. A new type of joint is used on each side of each block for interlocking with other blocks. The Evans Company has been manufacturing wood and steel automobile loading devices for more than 15 years and owns large tracts of timber in the South and the Northwest. Its Southern plants and woodworking mills are at Palatka, Fla.; Jackson and Meridian, Miss., and York, Ala.



Artist's conception of Barbara Frietchie's Home in Frederick, Maryland

DeLavaud Pipe . . . supplies and protects the historic town of Frederick, Maryland



FREDERICK, MARYLAND is associated in the minds of most Americans with the story of dauntless Barbara Frietchie —she who defied the invading troops to destroy her country's flag. Just how much the present-day town of Frederick cherishes the memory of its heroic daughter is shown by the beautiful Barbara Frietchie monument and the charming replica of her little home (shown above).

To serve and to protect the town of Frederick, Whitman, Requardt & Smith, Consulting Engineers, specified 18,000 ft. of deLavaud pipe for underground water mains. For deLavaud pipe is the strongest pipe ever cast. It is produced by pouring molten iron into a rapidly revolving cylindrical mold. The

metal of the pipe thus formed is dense, fine-grained and remarkably free from impurities.

"We have found deLavaud pipe to be satisfactory in every respect," writes E. St. C. Maxwell, City Engineer of Frederick. "We find it to be a stronger pipe than sand cast and at the same time to cut and tap with ease. The absence of the bead facilitates assembly and produces a joint with greater flexibility."

DeLavaud Pipe is made in accordance with U. S. Government specifications. We are also furnishing this product in the various thicknesses and weights shown in the specifications of the American Water Works Association and the American Gas Association. The deLavaud Handbook gives complete information. Write for free copy today.

United States Pipe and Foundry Co., Burlington, N.J.

Sales Offices:
New York

Philadelphia
Pittsburgh

Cleveland
Buffalo
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Our pipe bears the "Q-Check"
trademark of The Cast Iron
Pipe Research Association

Dallas
Birmingham
Kansas City

Minneapolis
Seattle

San Francisco
Los Angeles

INDUSTRIAL NEWS

Big Order for Cletrac Crawlers

The Cleveland Tractor Company, Cleveland, Ohio, manufacturer of Cletrac crawlers, lately received an order from the Forestry Department of the United States Government for a large number of tractors for use in building trails through government forest reservations in various sections of the country. Two models were recently added to the line of Cletrac crawlers which now comprises five different sizes. They are known as the "15" and "40-30" horsepower sizes and were announced and shown for the first time at the American Road Builders' Show at St. Louis in January.

Michaels Art Bronze New York Contracts

The Michaels Art Bronze Co., Covington, Ky., through F. L. Michaels, Sr., recently booked three important New York contracts involving more than \$200,000. Award for the State Roosevelt Memorial, John Russell Pope, architect, involved windows, doors, spandrels, gates, tablets and flagpole sockets, all in bronze, to cost \$190,000. Mr. Michaels also secured a \$6000 contract to furnish bronze entrance and doors and windows for the Seamen's Y. M. C. A. Building, and a \$9000 contract for similar work for a magistrate's court at Brooklyn.

Manager Milcor Steel Plant

The Milcor Steel Company, Milwaukee, Wis., manufacturers of sheet metal building products and fireproof metal building materials, announce the appointment of Earl A. Tanner as general manager of the plant at Canton, Ohio, which was enlarged last year and is now able to produce practically all Milcor building products, including metal lath, specialty products, etc. Mr. Tanner served as manager of jobbing sales for the Milwaukee plant for ten years and went to Canton six months ago as sales manager. A. F. Rich succeeded him at Milwaukee.

New Film for Industrial Photography

The Eastman Kodak Company, Rochester, N. Y., announces a new "super-sensitive panchromatic" film which is said to be several times "faster" than the ordinary film and plates, the term "fast" meaning the degree of light-sensitivity of the emulsion. This is further explained by the statement that pictures can be made with one-third to one-fifth as much artificial light and therefore is of value in industrial photography.

Virginian Railway Appointments

H. C. Mitchell, assistant general freight agent of the Virginian Railway Company, Norfolk, announces the following appointments, effective March 1: R. A. Burks, traveling freight agent at Charlotte, N. C.; C. L. Outen promoted to commercial agent, and J. L. Mathis appointed traveling freight agent, with offices at 812 National Loan and Exchange Bank Building, Columbia, S. C.

Installing High Powered Kiln

David M. Lea & Co., Inc., Richmond, Va., is installing a high powered Moore cross-circulation fan kiln in its new Richmond plant for drying box shooks and box veneer. The new kiln is engineered and manufactured by the Moore Dry Kiln Company, Jacksonville, Fla., and is equipped with the Moore system of heat control. It is a double track unit 56 feet long.

ARMCO Vice President Named

R. A. Solborg was recently elected vice president of the ARMCO International Corporation, export subsidiary of the American Rolling Mill Company, Middletown, Ohio. Becoming a member of the ARMCO organization in 1916 as assistant export manager, Mr. Solborg was transferred to the company's New York office in 1919, serving in the same capacity. In 1926 he went to Paris as district manager and was soon afterward placed in executive charge of sales in continental Europe.

Pond Joins Truscon Steel

The Truscon Steel Company, Youngstown, Ohio, announces appointment of Clark P. Pond as vice-president of engineering and sales. Mr. Pond was formerly connected in a similar capacity with the David Lupton's Sons Company, Philadelphia, and is widely known in the building field. With the Truscon Steel Company, Mr. Pond will interest himself largely in problems of engineering and sales of all Truscon products.

Railroad Establishes Museum

The Pennsylvania Railroad is collecting relics of early days of railroading for use in a museum to be established in Philadelphia. Following a recent announcement in the Pennsylvania Railroad News, employees from all over the line began sending in contributions. Material is being collected in Philadelphia and an accurate account kept of each contribution so the donor may receive credit for it when placed on display.

Air Cylinders and Adapters.—The American Society of Mechanical Engineers, New York, is distributing copies of the proposed American standard for rotating air cylinders and adapters, recently completed by Technical Committee No. 11 on chucks and chuck jaws of the sectional committee on small tools and machine tool elements. Inquiries are invited and should be addressed to C. B. LePage, assistant secretary, 29 West 39th street, New York.

Elevating Grader.—Bulletin No. 1216, issued by the Austin-Western Road Machinery Co., Chicago, Ill., is devoted to the 1931 model Austin contractor's special elevating grader with 42-inch carrier and anti-friction bearings. Several improvements are incorporated in the 1931 model, which is described by the manufacturer as "even more outstanding for its strength, flexibility, capacity and ease of handling."

St. Louis-Francisco Railway

Although gross earnings of the St. Louis-San Francisco Railway Company for 1930 were \$14,900,519 less than gross earnings for 1929, net railway operating income for 1930 was only \$4,462,600 less than in 1929. Gross operating revenue for last year amounted to \$74,208,767 and net railway operating income to \$16,565,641, according to the annual report of the company, while the surplus after all fixed charges was \$5,621,536, equivalent, after preferred dividends, to \$4.08 per share of common stock as compared with \$11.82 in 1929. Ton miles of revenue freight in 1930 amounted to 4,546,983,773, a decrease of 722,234,857 as compared with 1929, and

revenue passenger miles amounted to 272,953,494, a decrease of 50,765,618. On July 1, 1930, the company purchased for \$1,800,000 cash the entire capitalization of \$500,000 stock and \$2,000,000 bonds of the Gulf, Texas and Western Railway Company owning 99 miles of line in Texas, with trackage rights over 9 miles. An extension from Seymour to Vernon, Texas, is projected. Equipment purchased in 1930 cost more than \$10,850,000.

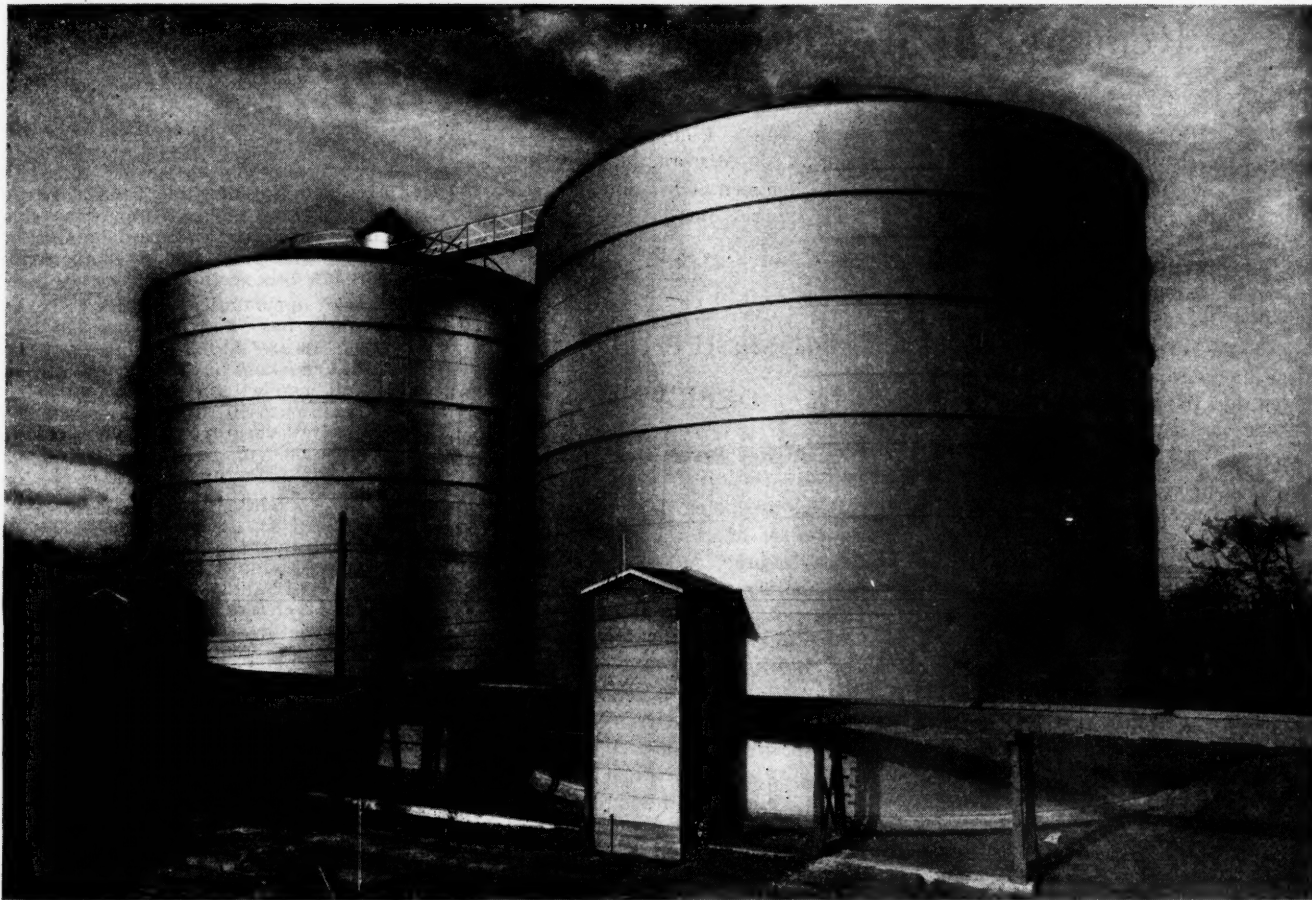
Western Electric Sales \$361,478,000

The 1930 sales of the Western Electric Company, Inc., New York, amounted to \$361,478,000, according to the company's annual report for the year ended December 31, 1930, a decrease of 12 per cent as compared with 1929, but considerably greater than 1928 or any previous year in the history of the organization. Earnings declined from \$31,556,000 in 1929 to \$20,298,000 in 1930, falling short of meeting interest payments and dividends by \$7,625,000. "While the company entered 1930 with the largest volume of unfilled orders in its history," said Edgar S. Bloom, president, "the recession in general business early in the year affected the telephone companies' requirements for equipment, and volume of business which they placed consequently decreased." Principal customers of the company are the telephone companies of the Bell System. Leased factory space was reduced 190,000 square feet during 1930 and in that period the company completed at its Point Breeze Works near Baltimore, where it is building a \$30,000,000 plant, an insulated wire building, a power plant and restaurant. The Point Breeze Works are producing toll cable for the East and Pacific Coast and a substantial part of the Bell System's requirements for rubber covered telephone wire. When building construction is resumed there, it is planned to transfer from the Hawthorne Works, Chicago, the manufacture of those types of apparatus used on the subscribers' premises. The number of employees at the end of 1930 was 64,253, which was 20,595 less than the number employed at the end of 1929, but 7929 more than were employed at the end of 1928.

Metal Trades Convention

The National Metal Trades Association will hold its annual convention at the Hotel Sinton, Cincinnati, April 15 and 16, with important subjects for discussion. Among these are stabilization of employment; unemployment insurance, public and private; employee training and supervisory development; industrial research; the economics of depressions, and "What the Machine Has Done to the Wage Earner."

The list of speakers will include: Glenn Bowers, Industrial Relations Counselors, Inc.; James D. Craig, Metropolitan Life Insurance Company; M. B. Folsom, Eastman Kodak Company, Rochester, N. Y.; Magnus W. Alexander, president of the National Industrial Conference Board; Harold S. Falk, the Falk Corporation, Milwaukee, and Franklin Hobbs, Central Trust Company, Chicago. C. F. Kettering, General Motors Corporation, is expected to give the banquet address.



Economical Cotton Seed Storage in Steel Tanks

Steel tanks provide an economical means of storing cotton seed. Their first cost compares favorably with the cost of cotton seed houses. They last much longer, however, than houses built of less durable materials and the actual annual cost is much lower.

Steel cotton seed tanks are advantageous where ground space is at a premium. They can be built relatively high and store a lot of seed in a small space.

These tanks are specially designed for the purpose they serve. They have self-supporting roofs, and are equipped with ventilators and openings for blower equipment. We are equipped to build special tanks such as these for any purpose, or to furnish standard sizes for the storage of water, oil, molasses, etc. Our nearest office will be glad to send you information or estimating prices without obligation.

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Havana, Cuba.....Apartado 2507

STANDARD STORAGE TANKS

Capacity (Gallons)	Diam- eter	Height	Capacity (Gallons)	Diam- eter	Height
10,000	12' 3"	11' 9"	100,000	27' 4"	23' 3"
15,000	15' 0"	11' 9"	125,000	27' 4"	29' 0"
20,000	17' 4"	11' 9"	150,000	30' 0"	29' 0"
25,000	16' 0"	17' 6"	175,000	32' 3"	29' 0"
30,000	17' 4"	17' 6"	200,000	34' 6"	29' 0"
35,000	18' 9"	17' 6"	225,000	36' 6"	29' 0"
40,000	20' 0"	17' 6"	250,000	38' 6"	29' 0"
45,000	21' 3"	17' 6"	300,000	42' 0"	29' 0"
50,000	22' 4"	17' 6"	400,000	49' 0"	29' 0"
60,000	21' 3"	23' 3"	500,000	54' 3"	29' 0"
70,000	23' 0"	23' 3"	600,000	60' 0"	29' 0"
75,000	23' 9"	23' 3"	750,000	66' 3"	29' 0"
80,000	24' 6"	23' 3"	1,000,000	77' 0"	29' 0"
90,000	26' 0"	23' 3"	1,500,000	94' 0"	29' 0"
			2,000,000	108' 4"	29' 0"

The view above shows two 3,000-ton cotton seed storage tanks at Greenville, Miss. They are 70 ft. in diameter and 60 ft. high.

B-209

HORTON TANKS

Reinforcing Steel Conditions

In the transition from the peak of prosperity in 1929 to the depth of depression in 1930, the decline in reinforcing steel tonnage was only 5 per cent, said President C. Louis Meyer in his address to the Concrete Reinforcing Steel Institute at its annual meeting in Biloxi, Miss., March 16. This he attributed to the use of reinforcing steel in many diversified fields, and he felicitated the members of the Institute on the versatility of their product.

Beyond this statement of the past and present, Mr. Meyer advocated business for profit, in the future. In the last analysis, as he saw it, an industry may enjoy reasonable profits in good times or bad, "if the factors making up that industry will have enough judgment and determination to maintain a market at profitable levels."

An outstanding economy in the industry, Mr. Meyer added, had been effected through standardization. For this year, the standard 11 sizes of bars will be practically in general use throughout the United States. The adoption of intermediate grade as a single standard grade for reinforcing bars has resulted in shipments of about 87 per cent of the billet tonnage reported by members of the Institute in the past two years, and "this percentage will be substantially increased in the present year."

"The need for the Concrete Reinforcing Steel Institute in the reinforcing steel industry is beyond question," Mr. Meyer continued. "In this era, every patriotic, progressive American business man should be a member of his industry association. He is benefiting from the activities of that association and should very properly be expected to bear his part of the expense." Further, on trade practices, he said:

"There is one underlying principle which is applicable to every market. We have all learned from our own experience that we have very definite costs accruing from the warehousing and fabricating of bars. These costs will probably average between \$6 and \$8 a ton. It is, therefore, preposterous to sell bars with a gross margin of only \$2 or \$3 a ton. To continue to do so means a continuance of the red ink bottle in your accounting department.

"Sooner or later, we must realize that each commodity must stand on its own bottom; that each commodity must earn its own profit. I believe the way out of this price-cutting problem is through the application of the rules of our Federal Trade Practice Conference. A published price and a one-bid policy are fair, sound, logical and reasonable policies, from which we all may benefit and profit."

The program also carried addresses by Robert Gregg, president of the At-

lantic Steel Company, Atlanta, and Judge Leon McCord, Montgomery, Ala., and other men of prominence within the industry and outside.

MISSISSIPPI TUNG OIL OPERATIONS

Industry May Prove Profitable to Farmers

Plans are being developed by Lamont Rowlands, of the La Row Investment Co., Picayune, Miss., for planting approximately 40,000 acres of land in that vicinity to tung oil trees, although details of the project have not been worked out. Mr. Rowlands expected to complete the planting of 4000 acres by March 15. Stock was obtained from the nursery of the Goodyear Yellow Pine Co., L. O. Crosby, Picayune, which also plans to set out about 4000 acres to tung oil trees next winter, with only a small planting at present. The company expects to raise other crops between the trees while they are small and use a portion of the orchards for grazing cattle, sheep and hogs. Under the plan outlined, it believes, if the land is properly prepared with power driven implements before the trees are put out, it will be profitable to raise cattle, sheep and possibly hogs along with the trees and without damage to the latter. Such operations are expected to pay their way and possibly yield a profit while the trees are growing.

Long growing seasons will make good winter pastures on the rolling lands where cattle may graze all winter, and on the more level lands oats, peas, lespedeza and ensilage may be produced. As the trees grow up, good shade will be afforded the cattle, while the latter will assist in the fertilization and upbuilding of the land.

Along this line, Mr. Crosby writes:

"It has occurred to us that it would be a waste of labor and of time to cultivate these lands without taking some crop off them, which we are certain can be done without any damage whatever to the trees. We have in mind, if we are successful with this program, that we shall advocate this for the farmers in this section. We believe that every farmer should have a portion of his farm planted in tung oil trees, even up to 40 or 50 acres, as this land could be made into his permanent pasture. After a certain number of years, we feel certain that his income would easily be doubled, as he would get an income from his tung oil trees, and likewise an income from his cattle crop. We believe these two will go well hand in hand."

A New Market for East Texas

(From the Houston Chronicle.)

The recent petroleum discoveries in East Texas have increased considerably the population of the towns which lie adjacent to the new oil fields. Large areas are being blocked, numerous rigs are up, a large and well-paid number of men will make their homes, temporarily at least, in this section of the state.

A new opportunity for East Texas agriculture has thus been created and the farmers are taking advantage of the fact that markets have been opened up. These oil men will in many cases bring their families with them for a residence of possibly several years. That means they must be fed. And East Texas has long been a truck and vegetable garden for the whole state.

It would seem from the news stories that the farmers are deciding to raise less cotton and more foodstuffs. Many of them have banked lease money. Now they have a chance to make considerable profits from the sale of fruits and vegetables to the increased number of people who will clamor for such products.

East Texas is going to undergo more than an oil boom. It will spend its money on agricultural improvements. Farms which have hitherto been run-down and poorly cared for will take on a new lease of life with new improvements. Cotton will still be an important crop, but not the only one. And the fine paved roads leading into the towns which house the oil workers will aid them in marketing fruit and vegetables which formerly were not considered money crops.

Reports that many East Texas farmers are setting aside a larger share of their acreage for the production of foodstuffs should encourage those leaders of agriculture in this state who have always insisted that the growth of cotton alone was a bad thing. "Plant more food crops" is now the slogan, and a wise one. That way lies permanent agricultural prosperity. Smith County has followed that system for years. Other counties in East Texas have gradually been evolving a multi-crop program. It looks as though the oil discoveries will hasten the day when this part of the state will possess a wisely diversified agriculture.

Sub-Contracts on Water Dam

The J. A. Laporte Corporation, Albany, N. Y., contractor for the Prettyboy dam on the Upper Gunpowder River for the City of Baltimore, has awarded sub-contracts to the Arundel Corporation, Baltimore, for sand and to the Philadelphia office of the Chapman Valve Manufacturing Co., Indian Orchard, Mass., for sluice gates. The dam and reservoir will cost about \$3,500,000 and the latter will impound 20,000,000 gallons of water. Joseph A. Lavezza & Son, Baltimore, and R. M. Lee, Monkton, Md., have contracts to clear the site of the reservoir, embracing about 1600 acres of wood land. Charles Brown Cornell, Youngstown, Ohio, is the engineer for the project.

INGALLS' QUALITY

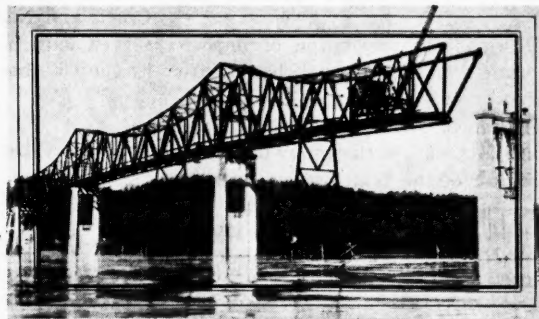
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The view above shows the 766-foot, continuous span being erected by our forces near Scottsboro, Ala. This span, together with four 200-foot spans, is the State of Alabama's new crossing of the Tennessee River at Scottsboro.

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Canton, Ohio, and Indianapolis, Indiana**

(131)

To Prevent Bank "Runs"

Suggestions for prevention of depositors' "runs" on commercial banks are advanced by Guy M. Walker, a contributor well known to readers of the MANUFACTURERS RECORD, in the following letter to the editor of the Wall Street Journal:

"I was interested to read how a Mississippi bank refused to stand for a run, because what it actually did was what I proposed in an article published about 12 years ago. In that article, I called attention to the fact that bank depositors have an entirely wrong conception of the function of banking and that most bank failures precipitated by runs are due to the fact that depositors are ignorant, and that the banks themselves are largely to blame for this ignorance.

"Every depositor feels that he should be able to go to the bank and withdraw his 'money' whenever he wants it. He has never been made to realize that what he has deposited in the bank was not money, but almost everything else except money. He has deposited checks, drafts, bills of exchange, postal money orders and whatnot, but it is not likely that he has ever deposited as much as 10 per cent of his total deposits in actual money—cash. He has only deposited credit, and credit is what he should be entitled to withdraw, instead of money.

"At that time, I proposed that every bank should, on the first page of the passbook issued to depositors, print a definition of banking, and what substantially was an agreement between it and its depositors, as follows: A bank deals in credit, not in money. What a depositor deposits is mostly credit and only a small percentage in money. It is agreed and understood between the bank and its depositors that if at any time the safety of the bank shall require it, the bank shall be entitled to refuse to pay in money to depositors the equivalent of what has been deposited in credit, but that a depositor may at any time withdraw his account by taking his proportion of the assets of the bank, whether they be money or credit.

"It ought to be explained over and over again that it is a physical impossibility for a bank to accept demand deposits and to lend the money, even on 10 days' time, and still be able to pay back money today or tomorrow. There is not, never has been and never will be a bank that can liquidate and pay its depositors in cash in full at the time depositors make demands, and the banking laws of the country ought to be revised to recognize this and give every commercial bank the same protection against runs that they now give savings banks and building and loan associations."

Buys Electric Properties

Oklahoma City, Okla.—The Oklahoma Gas & Electric Co. of this city, subsidiary of the Standard Gas and Electric Co., Chicago, Ill., has purchased electric properties serving eleven Oklahoma communities, including the following towns: Stratford, Deer Creek, Nardin, Dougherty, Luther, Agra, Tyron, Kendrick, Carney, Calumet and Sasakwa. All the

communities except Stratford, Deer Creek and Nardin have previously been served with power on a wholesale basis by the Oklahoma Gas and Electric Co.

Jacksonville Firm Builds Coast Guard Boats

Jacksonville, Fla.—The Gibbs Gas Engine Co. is building a fleet of fifteen 38-foot cabin boats for the United States Coast Guard Service, at a cost of approximately \$130,000. The keel of the first boat is now being laid and the vessel is expected to be launched within 70 days, while the contract calls for delivery of the entire fleet within 200 days. Eldredge-McInnis, Inc., Boston, Mass., designed the boats, which will have a 10-foot beam and 3-foot draft. They will be powered by Hall-Scott marine gas engines.

\$9,000,000 for Virginia Roads

Richmond, Va.—Regarding its road building program for the last half of 1930 and projected work for the fiscal year beginning July 1, 1931, and ending June 30, 1932, the State Highway Commission of Virginia, H. G. Shirley, commissioner, reports that on January 1, 1930, there was a cash balance in the construction fund of approximately \$500,000 and a monthly income from the gas tax of \$600,000. Contracts were awarded against these funds as follows: January and February, \$1,619,000; March and April, \$1,281,000; May and June, \$2,042,000, making a total of \$4,942,000. On January 1, 1931, there was a deficit in the construction fund of \$2,500,000. Work let or to be let in the first six months of 1931, includes: January and February, \$1,455,000; March and April, \$1,545,000; May and June, \$2,000,000, making a total of \$5,000,000. There will also be the normal amount of work by the state convict forces of approximately \$2,000,000 during this 6-month period. The amount estimated to be expended during the first six months of 1931 on construction, maintenance and convict work is \$9,000,000.

There was more work done in 1930 than in any previous year, it is said, and under the plan mapped out, more work will be put under contract in the first six months of 1931 than in the similar period of 1930. The commission opens bids March 17 on 5 road projects covering 12.5 miles, including two projects calling for 5.7 miles of macadam and one each calling for 2.6 miles of concrete, 2.8 miles of grade and drainage construction and 1.4 miles of cold bituminous pavement. Bids will also be opened the same date for a 380-foot bridge in Fluvanna County.

\$5,000,000 MARKET-GARAGE PROJECTED

Washington Structure to Cover 60,000 Square Feet

Washington, D. C.—Plans are being developed by the Kent Automatic Garage & Washington Market Corporation, now being organized, for the construction of a \$5,000,000 project to combine a large market, garage, storage, restaurant and recreational facilities on the block bounded by Tenth, Eleventh, H and I streets, northwest. The building, for which an area of 60,000 square feet will be available, will be of steel and concrete, with rough face brick, the market section to be 200 by 200 feet, while the garage will be 100 by 200 feet. There will be three floors in the market section, the first and second floors to accommodate 150 stalls each, while the third will be used for dry groceries. Heating and refrigeration plants will be housed in the basement. The garage section will have a parking capacity of 1000 cars. R. T. Lipscombe, Richmond, Va., is promoting the enterprise and it is understood the structure will be built by Boyd, Able & Gugert, architects and engineers of Philadelphia, Pa., construction being handled by Cramp & Co., Inc., also of Philadelphia. Thomas D. Walsh & Co., Washington, assembled the properties for the site and C. Bascom Slemph and Louis Titus, local attorneys, handled legal details. John W. Newman, Washington, is the manager of the Kent Automatic Garage & Washington Market Corporation, which will probably establish offices in the Southern Building.

\$1,000,000 Houston Apartment

Houston, Tex.—The erection of a 21-story cooperative apartment building to cost more than \$1,000,000 is scheduled to begin here within three months, according to W. A. Smith, realtor, who will have charge of management and sales. W. T. Carter, Jr., is the guarantor of the project, with the Federal Trust Company, Houston, acting as escrow agent. A company has been chartered under the name of 26 Sunset Road, Inc., to erect the building which will be located at 26 Sunset road. It will be 60 by 160 feet, of reinforced concrete, brick and stone, with mahogany millwork, tile baths and a vacuum heating plant. The basement will be used for a garage, while the first 18 floors will provide 33 apartments. A pent house and tower will surmount the apartment floors. Burns Roensch, Houston, is the architect and Paul F. Olsen, Chicago, consulting engineer.

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FORGINGS
UPSET RODS
FORGED TOOLS

FINANCIAL NEWS

Bond Issues Proposed

Ala., Birmingham—Jefferson County voted \$1,500,000 bonds for completing courthouse and jail now under construction. 2-5

Ala., Gadsden—City, H. C. Thomas, City Clk., opens bids Apr. 6 for \$42,000, not to exceed 6%, \$1000 denom. public improvement bonds. 2-5

Ala., Opelika—City, W. S. Harris, City Clk., opens bids Mar. 23 for \$40,000 Series A, not to exceed 6%, \$1000 denom. refunding bonds. 2-5

Ark., Russellville—Pope County, J. Q. Hill, County Judge, voted \$150,000 for erecting courthouse. 2-5

Ky., Newport—City, Harry A. Asplan, City Recorder, rejected bids for \$145,000 funding bonds. 3-12

La., Hammond—Tangipahoa Parish School Bd. formed Dist. 106 and called election for Apr. 6 on \$25,000 bonds. 3-12

Md., Myersville—City, William Wachtel, Treas., probably call election early in May on \$40,000 water works bonds. 3-5

Miss., Hattiesburg—Forrest County Supvrs. called election for Apr. 4 on \$25,000 Eatonville Consolidated School Dist. bonds. 3-5

Mo., Independence—Jackson County Court, Harry S. Truman, Presiding Judge, advises date for election on county bonds tentatively set for May 23 instead of May 12. 3-12

Mo., Joplin—City, Maude E. Fones, City Clk., defeated \$275,000 storm sewer bonds. 2-26

Mo., Mexico—City defeated \$75,000 sewage disposal plant bonds. 3-5

Mo., St. Louis—City, Louis Nolte, City Comptroller, reported, opens bids Apr. 15 for \$8,200,000, 4% bonds for streets, lighting, etc. 3-5

N. C., Wilkesboro—Wilkes County Comms., T. H. Settle, Clk., rejected all bids for \$127,000, \$1000 denom. school funding bonds. 3-5

Okla., El Reno—City, J. H. Bender, City Mgr., advises election on \$225,000 electric distribution system bonds will probably not be called before middle of summer. 3-12

Okla., Ponca City—City voted \$36,000 bonds: \$30,000, water system purchase; \$6000, electric system. 2-12

Tenn., Memphis—City, D. C. Miller, City Clk., opens bids Mar. 24 for \$500,000, 2½%, 3, 3¼, 3½, 3¾ or 4% revenue notes. 3-5

Tenn., Nashville—City opens bids Mar. 27 for \$1,000,000 general obligation bonds, including \$500,000 waterworks bonds; S. H. McKay, City Clerk. 3-5

Tenn., Woodbury—Cannon County opens bids Mar. 26 for \$15,000 improvement bonds. 2-19

Tex., Beeville—Beeville Independent School Dist., John R. Beasley, Pres., Bd. of Trustees, votes Mar. 28 on \$125,000 school building bonds. 2-19

Tex., Corpus Christi—Nueces County Water Improvement Dist. No. 1, E. E. Ludwig, Pres., Bd. of Directors, opens bids Apr. 20 for \$30,000, 6% water improvement bonds. 2-19

Tex., Flatonia—Flatonia Independent School Dist. voted \$25,000 school building bonds. 2-19

Tex., Refugio—Refugio Independent School Dist. School Bd. hold election in near future on \$100,000 school building bonds. 2-19

Tex., San Angelo—City votes Mar. 28 on \$175,000 road bonds. 2-19

Tex., San Marcos—San Marcos Independent School Dist., Ed. Taylor, Pres., School Bd., votes Apr. 7 on \$200,000 bonds. 2-19

Tex., Uvalde—Uvalde County, Green B. Fenley, Jr., County Judge, opens bids Apr. 11 for \$175,000 Road Dist. 1 bonds, Series 2. 2-26

Va., Tazewell—Towns of Tazewell and North Tazewell vote about Apr. 20 on \$135,000 school bonds. 2-26

Bond Issues Sold

Ala., Birmingham—City, Office of Comptroller, sold \$810,000 bonds to First National Bank of New York, and Stone & Webster & Blodgett, Inc., both New York, jointly, at 100.24. 2-26

Ga., Waycross—Ware County sold \$150,000,

4½% hospital bonds to Robinson-Humphrey Co., Atlanta, at 102.04.

Ky., Covington—City sold \$45,000, 4½% park refunding bonds to Magnus & Co., Cincinnati, Ohio. 2-19

Ky., Owingsville—Bath County sold \$100,000, 5% road and bridge bonds to Season-good & Mayer, Cincinnati, at 100.31.

Ky., Wurtland—Wurtland School Dist. recently sold \$20,000 coupon school bonds to Walter, Woody & Helmerding, Cincinnati, Ohio, as 5½s at 100.27. 2-19

La., Baton Rouge—City, L. J. Ricaud, Commr. of Finance, sold \$50,000, 6% street and alley improvement coupon bonds to E. A. Pierce & Co., New Orleans, at 102.09.

Md., Cumberland—City, Samuel Wertheimer, Commr. of Finance and Revenue, sold \$500,000 4½%, \$1000 denom. water improvement bonds to Alexander Brown & Sons, Baltimore, at 108.679 and accrued interest. 3-12

Mo., St. Joseph—St. Joseph School Dist., A. L. Loving, Sec.-Business Mgr., sold \$431,634, 4% bonds to Guaranty Co., New York; Northern Trust Co., Chicago, Ill. and Mississippi Valley Co., St. Louis, at \$431,634. 2-19

N. C., Gastonia—Gaston County, reported, sold \$115,000, 4½% tax anticipation notes to Citizens National Bank of Gastonia.

N. C., High Point—City, reported, recently sold \$345,000, 5% notes to W. O. Gay & Co., New York.

N. C., Winston-Salem—F. S. Moseley & Co., New York, purchased \$500,000 city revenue anticipation notes.

Okla., Asher—Pottawatomie County School Dist. No. 112 recently sold \$15,600 coupon school bonds to C. Edgar Honnold, Oklahoma City, as 5½s and 5¾s, at par.

S. C., Georgetown—Georgetown County sold \$75,000 funding bonds to Well, Roth & Irving Co., Cincinnati, Ohio.

Tenn., Charlotte—Dickson County recently sold \$200,000, 5½%, \$1000 denom. coupon funding bonds to Taylor, Wilson & Co., Inc., Cincinnati, Ohio. 1-29

Tenn., Knoxville—City, John C. Borden, Dir. of Finance, sold \$200,000 4½% permanent improvement bonds to East Tennessee National Bank, at par. 2-12

Tenn., Pulaski—Giles County Court, W. F. English, Clk., sold \$100,000, 4½%, \$1000 denom. funding bonds to First Security Co., Memphis, at par, accrued interest and \$650 premium. 3-5

Tenn., Ripley—Lauderdale County sold \$100,000 funding notes to Union Planters Bank, Memphis, as 5s, at par.

Tex., Beeville—Bee County, reported, recently sold \$126,826, 6% bridge warrants to Monarch Engineering Co., San Antonio.

Tex., Sherman—Grayson County sold \$474,000 road bonds to Hall & Hall, Temple, at 100.1687.

Va., Roanoke—City, P. Hill Tucker, City Auditor, sold \$750,000, \$100 denom. sewer and street bonds to First National Exchange Bank, Roanoke, R. W. Pressprich & Co. and Darby & Co., both New York, and Baker-Watts Co., Baltimore, Md., at 104.393. 2-26

Building & Loan Associations

Ky., Marion—Marion Building & Loan Association, capital \$150,000, chartered; O. S. Denny, T. H. Cochran.

New Financial Corporations

Coffeeville Bank, J. F. Provine, Pres., Coffeeville, Miss., plans reopening.

Fla., Boncagrande—Florida Bank of Boncagrande, capital \$25,000, being formed by Barron Collier, John Law Keer, W. J. Gilligan and associates.

State National Bank, W. H. Roach, Pres., acquired First National Bank, J. P. Williams, Pres., both Mineral Wells, Texas.

First National Bank, C. A. Loftis, Pres., Longview, Texas, increasing capital, \$80,000 to \$100,000.

Woodlawn-American National Bank, J. T. Rhodes, Pres., acquired Wahouma Savings Bank, J. S. Smith, Pres., both Birmingham, Ala.

Financial Notes

Net Earnings Show Increase

With a satisfactory volume of business in the first half of 1930, followed by a light volume in the fall, the United States Pipe and Foundry Company, Burlington, N. J., had net earnings for the year of \$2,881,046, as compared with \$2,581,229 for 1929, according to its report for the fiscal year of 1930. Out of earnings available for the purpose, directors on January 22, 1931, declared the following dividends: \$1.20 per share on the first preferred stock, payable quarterly, and \$2.00 on the common stock, also payable quarterly. Total earnings, after deducting the cost of operating and maintaining plants, amounted to \$3,005,638.

United States Steel Report

The 29th annual report of the United States Steel Corporation, New York, for the fiscal year ended December 31, 1930, shows total earnings after deducting all expenses incident to operations, including ordinary repairs and maintenance, allowance for employees' profit sharing fund and taxes, including reserve for Federal income taxes, of \$157,710,231, as compared with \$265,838,923 for 1929, and a total net income of \$104,421,571, as compared with \$197,592,060 for 1929. The company paid dividends of \$25,219,677 in 1930 on 7 per cent preferred stock and \$60,365,796 on 7 per cent common stock, leaving a surplus net income in 1930 of \$18,836,097. Earnings per share on the common stock, based on the average number of shares outstanding were \$9.18.

For the entire year of 1930 the production of rolled and other finished products for sale averaged 65.6 per cent of capacity compared with 89.2 per cent in the previous year. The ratio of output to capacity in 1930 was next to the lowest for any year since the organization of the corporation, the lowest having been in 1921, when the ratio was 47.5 per cent. A lessening in demand during the year for products, with a substantial decline in prices, accounted for a reduction of approximately \$40,600,000 of the total reduction of \$108,128,700 in net earnings, in 1930 as compared with 1929. Prices at the close of 1930 were somewhat less than the average, but appeared to be stabilized with a slight advancing tendency due to an improved prospective demand. Domestic shipments of sundry materials and by-products in 1930 showed an increase of 62.98 per cent as compared with 1929, while shipments of Portland cement showed an increase of 88.68 per cent.

Subsidiaries of the United States Steel Corporation include the American Bridge Company, New York; American Sheet & Tin Plate Company, Pittsburgh; American Steel & Wire Company, Chicago; The Canadian Bridge Company, Ltd., Walkerville, Ontario; The Canadian Steel Corporation, Ltd., Ojibway, Ontario; Carnegie Steel Company, Pittsburgh; Columbia Steel Company, San Francisco; Cyclone Fence Company, Waukegan, Ill.; Federal Shipbuilding & Dry Dock Company, Kearny, N. J.; Illinois Steel Company, Chicago; Isthmian Steamship Company, New York; The Lorain Steel Company, Johnstown, Pa.; Minnesota Steel Company, Duluth; National Tube Company, Pittsburgh; Oil Well Supply Company, Pittsburgh; Tennessee Coal, Iron & Railroad Company, Birmingham; United States Steel Products Company, New York, and the Universal Atlas Cement Company, Chicago.

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Port and Other Activities at Galveston

Galveston, Tex.—The new marine hospital being erected here at a cost of \$1,000,000 is about 90 per cent complete and is expected to be put in service in July. The project consists of a main building and a number of separate units.

A report filed by the State Reclamation Department with Major Milo P. Fox, U. S. District Engineer at Galveston, points out that the canalization of the Trinity River from Fort Worth to Dallas is entirely feasible and estimates the cost of the project, including locks, dams and reservoirs, at \$53,733,000. The total length of the canal would be 554.2 miles.

The Galveston Wharf Co. plans extensive enlargements and improvements at pier 19, used as a terminal by the United States Fruit Co. Imports of bananas through Galveston in 1930 almost doubled the imports in 1929.

A recent bill enacted by Congress carries a provision for a new \$375,000 immigration station on Galveston Island. The present station, which is to be abandoned, is on Pelican Island, two miles north of Galveston.

Bank clearings at Galveston for February amounted to \$106,818,000, an increase of \$6,000,000 over January.

Brazil has established a consulate in Galveston, in charge of Joao A. Rodrigues Martins, who is optimistic regarding future commercial relations between his government and that of the United States.

\$350,000 Marble Contract

Baton Rouge, La.—The George A. Fuller Co., Washington, D. C., general contractor for the \$5,000,000 state capitol under construction here, has awarded contract to the Candora Marble Company, Knoxville, Tenn., for \$350,000 worth of marble for interior construction and decoration, most of the product to be excavated in Tennessee. The Candora company, it is understood, will divide the contract with the Albert Weiblen Marble & Granite Co., New Orleans, La. Weiss, Dreyfous & Seiferth, New Orleans, are the architects for the capitol.

Airplane Plant at Capacity

The airplane plant of the Glenn L. Martin Company, Baltimore, is operating at capacity and is said to have sufficient orders on hand to assure 100 per cent operation during the remainder of 1931. A force of 1400 workmen is now on the company's payroll. The first annual re-

port of the company since operations were transferred to Baltimore from Cleveland shows a gross volume of business in 1930 of more than \$2,000,000, although the plant did not begin delivering planes until July. There was a net profit from operations of \$409,007. The factory is normally organized to produce two airplanes weekly, but improved factory arrangements permit a rapid increase in production schedules if necessary. At present the Martin company is engaged on the construction of 55 flying patrol bombers for the United States Navy, and on 9 monoplane flying boats, while other torpedo and bombing planes for experimental purposes are being planned and constructed.

\$5,000,000 Memphis Corporation

Memphis, Tenn.—General Aggregates Corporation, recently incorporated in Delaware, has leased offices in the Strick Building here. The new corporation, it is said, will acquire properties of six large companies engaged in the production and sale of crushed stone, sand, gravel, rip-rap and limestone in the states of Arkansas, Kentucky, Tennessee and Mississippi. A. J. Hoffman, Louisville, Ky., founder of the Kentucky Consolidated Stone Co., is the president of the new company and W. W. Fischer, president of the Fischer Lime and Cement Co., Memphis, is the chairman of the board. L. T. McCourt, an executive of the Fischer company, is vice-president in charge of production and W. C. Spark and W. E. McCourt are divisional managers. The Bank of Commerce and Trust Co. will be transfer agent and registrar for the corporation's stock, and financial issues will be handled by E. W. Hayes & Co., both of Memphis. Resources of the new company are said to be in excess of \$5,000,000 and, according to Mr. Hoffman, the organization is the nucleus for a larger consolidation.

\$350,000 Hydraulic Laboratory

Washington, D. C.—Bids will be opened March 23 by the Bureau of Standards, Department of Commerce, for the construction of a \$350,000 National Hydraulic Laboratory. No equipment will be included in this contract, as these items will be purchased under separate contracts. Plans and specifications will soon be available for the following equipment to be built into the substructure of the building: Lengths of welded steel pipe, including bends, 8 feet and 3 feet in diameter; wall castings for sluice gates from 16 inches square up to 8 feet square, and cast iron expanders and flap valves for one 30-inch, one 36-inch and one 42-inch pump.

\$1,233,000 Railroad Bridge

Booneville, Mo.—Contract to design, fabricate and erect the steel superstructure of a new bridge over the Missouri River here for the Missouri-Kansas-Texas Railroad Co., F. Ringer, chief engineer, St. Louis, has been awarded to the American Bridge Co., New York. The erection of the new spans is scheduled to begin about August 1 and the bridge completed and ready for traffic on or about January 1, 1932. The bridge superstructure will consist of three 300-foot, one 408-foot vertical lift and one 247-foot through rivet connected truss spans and one 60-foot through plate girder. The lift span, said to be the largest vertical lift span for railroad service so far undertaken, will provide a clear horizontal opening of 400 feet for river navigation and when raised will have a vertical clearance of approximately 57 feet above standard low water. It will be interlocked with automatic block signals and will be electrically operated and controlled automatically with modern safety devices. The work will be in direct charge of R. M. Stubbs, bridge engineer of the railroad, under the supervision of Mr. Ringer. A concrete substructure for the bridge was built during 1930, the Kansas City Bridge Company, Kansas City, Mo., handling the contract. The substructure is founded on solid rock, the river piers being sunk by pneumatic process to a maximum depth of approximately 50 feet below low water. The cost of the completed project is estimated at \$1,233,000.

Norfolk Yard to Modernize Battleship

Norfolk, Va.—The Navy Department announces the battleship Mississippi will be modernized at the Norfolk Navy Yard and that the New Mexico will be modernized at the Philadelphia Navy Yard, the ships having been ordered to the yards before April 1. These jobs are a part of a modernization program of the Navy, which will also involve the battleship Idaho. The schedule calls for an expenditure of \$30,000,000.

\$10,000,000 Government Building

Washington, D. C.—Bids will be opened March 23 in the office of Jas. A. Wetmore, Acting Supervising Architect, Treasury Department, for clearing the site of the new \$10,000,000 Department of Justice Building. Zantzinger, Borie & Medary are the architects for the new structure and Isaac Hathaway Francis, mechanical engineer, both of Philadelphia, Pa. Gravell & Duncan Lewis, Washington, are the structural engineers.

Freight Rates on Second Growth Timber

By F. A. ANDERSON,

Manager, Gloster Lumber Company, Gloster, Miss.

YELLOW pine operators looking to continued operation of their mills, are confronted by the important question of conserving the remaining stand and providing for future supply needed to maintain continuous work. It is realized that practically all the virgin pine timber approaches depletion, and mills expecting to remain in operation can hope to do so only through the cutting of second-growth timber.

The source of second-growth timber is either old cut-over areas with stands of advanced second-growth on lands long abandoned for farming purposes, or the farm wood lot. This fact raises the question of transportation of saw-logs over long distances to located mills. This leads to an all-important question involving the establishment of a second-growth-log rate which will permit cheap transportation of logs over railroad lines serving mills depending on second-growth timber for their future supply.

Recent tests conducted with second-growth pine prove that this timber weighs 25 per cent more than the original virgin timber and, to date, it is being transported over certain railroad lines at the same tariff rates as the virgin timber. In other words, second-growth timber weighs around 12,500 pounds per 1000 feet, as compared with 10,000

pounds for virgin timber. Furthermore, the percentage of B & B grades for virgin timber ranges from 13 to 35 per cent, while for second-growth timber the same grades range from 3 to 15 per cent.

It is easy, therefore, to see that mills paying high transportation charges on logs producing a lower grade of lumber will find it impossible to continue in business unless there is a marked reduction in freight rates. So it will mean much to many railroads to scrutinize their rates on this commodity as a means of cooperating with the mill owners for more equitable rates, which will eventually lead to an increase in tonnage and an increase in revenue.

Some railroads might argue that a reduction in rates will mean a loss in revenue but this, in a measure, will not be the case. Reduced rates mean a larger territory in which the mill operator can expect to purchase his saw-logs, and this will mean more tonnage, with increased revenue. With reduced freight rates, it may be expected that the small portable mill will be forced to curtail operation, as timber owners will be inclined to dispose of their timber to the large mill owner, from whom better prices will be obtainable. It is estimated that increased tonnage to the railroads will amount to approximately 15 per cent of the present shipment.

Then, there is the farmer, with his farm wood-lot. Under existing conditions, the movement of logs by the farmer is very small, for the simple reason that he cannot afford to cut and load logs for the low prices now obtainable at the mill, and at the same time the mill operator cannot afford to pay more unless some relief is given in the way of reduced transportation cost. It might seem, therefore, that a reduction in rates will mean a substantial increase in the movement of logs by railroads and, in addition, mean much to the farmer also.

Besides the transportation of saw-logs, the railroads should consider the revenue derived from transportation of the manufactured lumber. It is evident that a large movement of saw-logs will mean a large movement of manufactured lumber. Furthermore, this movement will be broadened if the lumber is manufactured at some centrally located band mill, rather than at some small portable mill. The modern band mill, through its high grade of manufacturing facilities and dry kilns, can be expected to keep down waste and promote closer utilization, thereby increasing the value of the manufactured product, which in turn will permit log hauls from mill to points of consumption.

3729-Foot Railroad Bridge

Augusta, Ga.—The Charleston & Western Carolina Railway Co. has applied to the War Department for authority to build a new bridge across the Savannah River at Sandbar Ferry, near Augusta, to take the place of the present structure. The proposed bridge would consist of five steel truss spans, eight steel girder spans and a bascule draw span, with a total length of 1407 feet, and a trestle approach of reinforced concrete, of the solid floor type, 2322 feet long, making a total length of 3729 feet. The base of rail of the track would be raised four feet to provide for a floodway. Steel spans have been purchased from the American Bridge Co., New York, while the masonry and concrete trestle will be built by the Charleston & Western Carolina construction forces.

Testing Submarine Plane

Washington, D. C.—Tests are being made by pilots at the Anacostia Naval Air Station on the Navy-Loening midjet collapsible plane designed for use from a submarine. Fitted with a 110-horsepower motor, the plane was given its first tests in speed over a course from the air station down the Potomac River, to determine the effectiveness of various speeds and the climbing ability of the plane. Other tests will provide for storage in an 8-foot tube, three minutes being allowed for dismantling.

The Legislature is considering a measure authorizing Montgomery County, Maryland, to vote on a bond issue of \$2,144,000 for school construction during 1931, 1932 and 1933.

Building 25 Army Planes

The B-J Aircraft Corporation, Baltimore, is manufacturing 25 YP-16 two-seater pursuit planes for the Army, delivery to begin in May and to be completed by August or September. These planes are to be equipped with 600-horsepower super-charged Conqueror engines and are expected to have a speed of 200 miles per hour. The company is also building a two-seater, light observation, experimental plane for the Navy, rated for use aboard light cruisers. It will be equipped with a Wasp, Jr. engine developing 400 horsepower and has an estimated speed of 150 miles per hour. A Navy single seat experimental plane, which was damaged in tests aboard the arresting platform at Hampton Roads, is also being reconstructed and is expected to be ready for trials again in April.



PROPOSALS



BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

Bids close April 8, 1931.

Office of the Executive Officer, Arlington Memorial Bridge Commission, Navy Building, Washington, D. C. Sealed bids will be received in this office until 11:00 A. M., Eastern Standard Time, April 8, 1931, and then publicly opened in Room 1613 Navy Building, for building a tunnel under the Memorial Parkway to the Cemetery on the Virginia shore of the Arlington Memorial Bridge project. The work involves the placing of about 2100 cubic yards of reinforced concrete and 211 tons of reinforcing steel. Further information upon application.

Bids close April 15, 1931.

U. S. ENGINEER OFFICE, MEMPHIS, TENN.—Sealed bids will be received here until 2 P. M., April 15, 1931, and then opened, for constructing two steel hull, self-propelled suction dredges with 32 inch discharge. Propelling machinery, two triple expansion, vertical, marine type engines, of 600 H.P. each. Dredging machinery, 1250 B.H.P. normal. Steam turbine with double reduction gear. Overall dimensions involved 214 ft. long, 46 ft. wide, 9 ft. deep, 5 ft. draft. Estimated total weight, 1075 tons. Deposit of \$150 required for plans. Information on application.

Bids close April 2, 1931.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., March 5, 1931.—SEALED BIDS in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 2, 1931, for furnishing all labor and materials and performing all work for the remodeling and enlarging of the U. S. post office at Greenville, Miss. Drawings and specifications, not exceeding one set, may be obtained by any satisfactory general contractor at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 10, 1931.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., March 6, 1931.—SEALED BIDS, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., April 10, 1931, for furnishing all labor and materials and performing all work for the construction (except elevators) of the U. S. post office, etc., at Lubbock, Texas. Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close April 7, 1931.

U. S. ENGINEER OFFICE, First New Orleans District, Poland and Dauphine Streets, New Orleans, La. SEALED BIDS, in duplicate, will be received until 2 P. M., April 7, 1931, and then publicly opened, for furnishing all labor and materials and performing all work for clearing the site, constructing sheet pile cofferdam, making the excavation, driving the foundation piling and sheet pile cut-off walls, constructing the concrete lock walls and floor, including the reinforcing steel, and constructing a temporary open deck timber pile trestle under the tracks of the Texas Pacific-Missouri Pacific Terminal Railroad of New Orleans, providing maintenance on the trestle until such time as traffic is suspended thereon and routed over the new bridge, all in connection with the lock which is to be constructed in the Mississippi River-Atchafalaya River section of the Louisiana-Texas Intracoastal Waterway at Harvey, La.

GENERAL INFORMATION About Proposal Advertising in Manufacturers Record

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Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close March 26, 1931.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received until 10:00 A. M., March 26, 1931, and then publicly opened, for the construction and completion of three (3) two story Field Officers', three (3) two story Company Officers', six (6) one story Company Officers' and four (4) Non-commissioned Officers' quarters at Fort Bragg, N. C. Bid bond in the total sum of \$22,500.00 will be required with each proposal. \$25.00 deposit certified check, payable to Treasurer of the United States, required for plans and specifications. Further information on request.

Bids close March 25, 1931.

OFFICE OF THE ARCHITECT OF THE CAPITOL, Washington, D. C., March 7, 1931. SEALED BIDS will be opened in this Office at 3 P. M., March 25, 1931, for the construction of walks on the site for the enlargement of the U. S. Capitol Grounds, Washington, D. C. Drawings and specifications, not exceeding two sets, may be obtained at the Office of the Architect of the Capitol, in the discretion of said Architect, by any satisfactory general contractor. A deposit of \$25.00 for each set of drawings and specifications will be required to insure their return in good condition. Checks therefor to be made payable to the order of David Lynn, Architect of the Capitol.

Bids close April 21, 1931.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the U. S. Veterans' Bureau, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., April 21, 1931, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at U. S. VETERANS' HOSPITAL, TUSCALOOSA, ALABAMA, BUILDINGS AND UTILITIES, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete construction, hollow tile, brick work, cut stone, cast stone, architectural terra cotta, marble work, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, steel flag pole, steel sash, interior steel stairs with slate treads, exterior steel stairs, steel shelving and cabinets, metal stall partitions, slate, metal and built-up roofing, skylights, roof ventilators, metal lathing, plastering, sound deadening, carpentry, dumbwaiter, platform scales, metal weatherstrips, insect screens, window shades, painting, glazing, hardware, plumbing, vacuum cleaning system, refrigerating and ice making plant, boiler plant, steel water tank and tower, radial brick chimney, heating and ventilating, electrical work, electric elevators, nurses call system, fire alarm system and outside sewer, water, gas, steam and electric distribution systems. SEPARATE BIDS will be received for (a) General Construction including Radial Brick Chimney; (b) Plumbing, Heating, Electrical Work and outside distribution systems; (c) Electric Elevators; (d) Refrigerating and Ice-Making Plant; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Director, drawings and specifications may be obtained upon application to the Construction Division, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawings and specifications within ten days after date of opening bids will be required. Failure to comply with this requirement will be considered in connection with future applications for drawings and specifications. GEORGE E. IJAMS, Director, March 18, 1931.

Bids close April 14, 1931.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the U. S. Veterans' Bureau, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., April 14, 1931, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at U. S. VETERANS' HOSPITAL, CANANDAIGUA, NEW YORK, BUILDINGS AND UTILITIES, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete construction, hollow tile, brick work, cut stone, cast stone, architectural terra cotta, marble work, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, steel sash, steel stairs with slate and cast iron treads, steel shelving, cabinets and partitions, slate, metal and built-up roofing, skylights, roof ventilators, metal lathing, plastering, sound-deadening, carpentry, dumbwaiter, platform scale, metal weatherstrips, insect screens, window shades, painting, glazing, hardware, plumbing, vacuum cleaning system, refrigerating and ice-making plant, boiler plant, radial brick chimney, heating and ventilating, electrical work, electric elevators, nurses' call system, fire alarm system and outside sewer, water, gas, steam and electric distribution systems. SEPARATE BIDS will be received for (a) General Construction including Radial Brick Chimney; (b) Plumbing, Heating, Electrical Work and outside distribution systems; (c) Electric Elevators; (d) Refrigerating and Ice-Making Plant; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Director, drawings and specifications may be obtained upon application to the Construction Division, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawings and specifications within ten days after date of opening bids will be required. Failure to comply with this requirement will be considered in connection with future applications for drawings and specifications. GEORGE E. IJAMS, Director, March 5, 1931.

Bids close April 28, 1931.

U. S. Engineer Office, P. O. Box 667, Vicksburg, Mississippi. Sealed bids will be received at this office until 10 o'clock A. M., April 28, 1931, and then opened, for constructing and delivering afloat at Vicksburg, Mississippi, one 16 inch self-propelled pipe line dredge complete.

Bids close March 23, 1931.

Notice of Sale of Bonds

Opelika, Ala.

Sealed proposals will be received by the City Council of Opelika, Alabama, at the Council Chamber in the City Hall of Opelika until Eight o'clock P. M. March 23, 1931, and then publicly opened, for the sale of forty thousand dollars Series A Bonds of said city, issued to refund a like amount of valid outstanding bonds of said city that were outstanding at the adoption of the Municipal Bond Code, which bonds are to bear date of April 1st, 1931, and which are issued pursuant to ordinance of said city adopted March 9th, 1931. Said sale to be made publicly.

The principal of the issue of said bonds matures and is payable in annual installments of one thousand dollars (\$1000.00) each year from the first to the twentieth year from their date and of two thousand dollars (\$2000.00) each year from the twentieth to the thirtieth year from their date; the last installment of bonds to be due and payable April 1st, 1961. Said bonds shall be of the denomination of One thousand dollars (\$1000.00), each principal and interest payable in gold coin at the Central Hanover Bank and Trust Company in the City of New York, State of New York.

Each of said bonds shall bear interest from the date of their issue at the rate of not exceeding six per centum (6%) per annum, payable semi annually on the first days of April and October of each year beginning with the first payment on October 1st, 1931, the actual rate of interest to be determined by the City Council of Opelika at the time of the sale of said bonds and the bidders are invited to name the rate of interest in their bids; certified check for \$1000.00 shall accompany each bid as a guarantee that the bidder will accept and pay for said bonds if awarded to him. The city will furnish to the purchaser the opinion of Messrs. Storey, Thorndike, Palmer and Dodge of Boston, Massachusetts, approving the legality and validity of said bonds. The right is reserved to reject any and all bids. Dated this March 10th, 1931.

HENRY K. DICKINSON,
Mayor.

W. S. HARRIS,
City Clerk.

Bids close March 31, 1931.

U. S. ENGINEER OFFICE, MONTGOMERY, ALA.—Sealed bids, in quadruplicate, will be received until 2:00 P. M., March 31st, 1931, and then publicly opened, for furnishing all labor and materials and performing all work for dredging channel from Pensacola Bay through Big Lagoon, thence across a neck of land which separates Big Lagoon from Old River, and thence to the mouth of Portage Creek, comprising 783,000 cubic yards, place measurement. Further information upon application.

Bids close April 9, 1931.

OFFICE OF THE ARCHITECT OF THE CAPITOL, Washington, D. C., March 10, 1931. SEALED BIDS will be opened in this office at 3 P. M., April 9, 1931, for a steam distribution system to be installed from the Capitol Power Plant, E Street between New Jersey Avenue and South Capitol Street, S. E., Washington, D. C., to certain Government buildings adjacent to the Capitol, including concrete ducts, tunnels, etc. On or after March 16, 1931, drawings and specifications, not exceeding two sets, may be obtained at the Office of the Architect of the Capitol in the discretion of said Architect, by any satisfactory contractor experienced in this class of work. A deposit of fifty dollars (\$50) will be required for each set of drawing and specifications, to insure their return in good condition. Checks therefor to be made payable to the order of David Lynn, Architect of the Capitol.

Bids close March 24, 1931.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building six sections of State Highway as follows:

Baltimore City, Contract No. BC-102-74—One section of State Highway on Russell Street from Maryland Avenue to Bush Street, a distance of 0.74 mile (sheet asphalt)

Baltimore City, Contract No. BC-100-74—One section of State Highway on the Washington Boulevard from Letitia Avenue to the Southern City Limits, a distance of 0.6 mile (concrete shoulders)

Baltimore County, Contract No. B-189-711—Federal Aid Project No. 223—One section of State Highway on Liberty Road

from North Branch to Harrisonville, a distance of 2.99 miles (alternate bids for resurfacing with Rock Asphalt and Bituminous Concrete)

Caroline County, Contract No. Co-65-24—One section of State Highway from Denton toward Tuckahoe, a distance of 2.0 miles (concrete)

Dorchester County, Contract No. D-75-14—One section of State Highway from Mt. Holly (end of D-51) to Airy, a distance of 1.70 miles (concrete)

Prince George's County, Contract No. P-162-32—One section of State Highway along the Old Powder Factory Road from the end of No. P-95 toward Beltsville, a distance of 1.0 mile (concrete) will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 24th day of March, 1931, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 10th day of March, 1931.

L. H. STEUART, Secretary.

G. CLINTON UHL, Chairman.

Bids close March 31, 1931.

Roads and Bridges

Richmond, Va.

Sealed bids will be received Tuesday, 10 A. M., March 31, 1931, Va. Dept. of Highways, State Office Bldg., Richmond, Va.

Proj.	Mi.	Type	Yds.	Excava.
177	0.4	Mac. S. T.	3,476	11,678

& Br. Over Clinch Riv., B Conc. 453, Reinf. Steel 60,500, Str. 219,000.

225	3.95	Conc.	26,340	4,952
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463 4.4 Rock Asph. & Conc. Rock, 51,865 Con. 18,909 8,000.

493	1	Soll S. T.	3,146	42,585
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698	1.2	Mac. S. T.	13,517	37,880
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Br. Reed Cr. A Conc. 380, Reinf. Steel 42,300, Str. 225,000.

705	0.5	Gravel S. T.	1,594	5,862
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& Br. Goldenvale Cr. Conc. 137.8, Reinf. Steel 11,340, Piling 1,560.

Details obtainable upon request.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

WATER POWER

WATER POWER—Will sell or lease 350 to 1000 horsepower.

E. L. THOMAS,
Belton, S. C.

TIMBER OPERATION

FOR SALE—Complete Saw Mill with Planing Mill, Dry Kln., and all necessary equipment, well located in South Carolina, with an abundant timber supply behind it. Capacity 30,000 ft. per day. Can be bought at a reasonable price. Address P. O. Box 1426, Norfolk, Va.

FARM, FRUIT AND TRUCK LANDS

ARKANSAS

FARM—115 acres, highly improved; paved highway, 6 miles Malvern, Ark.; 22 miles Hot Springs; 6-room painted dwelling, tenant dwelling, barn, etc.; good orchard; tourist camp site; 94 acres in pasture and cultivation; mostly wire fence; worth \$5000; sacrifice for \$2500, payable \$1250 cash, balance terms; no trades.

J. ELMO YOUNG, Malvern, Ark.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 28c a line

300 lines 26c a line

500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

FARM, FRUIT AND TRUCK LANDS

FLORIDA

12 ACRES garden land in corporation of Ormond, Fla.; 50 bearing orange and grapefruit trees, also figs and peaches; 9-room house, completely furnished, including electric refrigerator, piano, etc. City water, electric lights, rose garden, lily pool. Price for quick sale \$7800.00.

A. H. BLEEKMAN, Ormond, Fla.

TEXAS

LOWER RIO GRANDE Valley orchards and acreage at actual value. Owner's price direct to you. Send for list. ROBERTS REALTY CO., Realtors, McAllen, Tex.

MEXICAN INVESTMENTS

MEXICO. Reports made on investments and prospective investments for Banks, Industrial Plants, Mines and Utilities. W. R. Pender Eng. Service Corp., Post Dispatch Bldg., Houston, Texas.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

BUSINESS OPPORTUNITIES

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. **ADAM FISHER MFG. CO.**, 578 Enright, St. Louis, Mo.

CORPORATE FINANCING, Municipal Bonds, First Mortgage Loans originated and sold. Negotiations in Water Works and other Utilities. **BANKERS BOND AND MORTGAGE CO.**, AMARILLO, TEXAS

MEMPHIS, THE WORLD'S HARDWOOD MARKET. The meeting place of buyer and seller on the ground in touch with conditions; you get prompt confidential service. Orders placed for direct shipment. **E. W. PRATT, JR.**, Buyer and Shipping Agent, Southern Hardwoods, Lee Bldg., Memphis, Tennessee.

PARKERSBURG.

Successful manufacturers are invited to join this city's colony of prosperous, medium sized, diversified industrial plants.

BOARD OF COMMERCE, Parkersburg, West Virginia.

FOR SALE

All equipment of small bank, suitable for bank, realty office, insurance or building and loan office. This modern equipment cost about \$20,000.00. For sale at 20 cents on the dollar. Full schedule and photographs furnished on request.

JOSEPH R. DUNN,
503 Graham Building,
Jacksonville, Fla.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building New York City

INDUSTRIAL PLANTS

COTTON MILL FOR SALE—Complete plant of 14,000 spindles adapted for making 20's to 30's single and ply yarns—Two story brick mill building, brick warehouse, waste houses, 51 tenant houses, 30 acres of land situated immediately outside of town of 3,000 population in Piedmont North Carolina—Healthful locality—Efficient help plentiful—Plant now in full operation—Will sell at sacrifice price—Inspection by interested parties invited—Communicate with No. 9093 care Manufacturers Record.

INDUSTRIES WANTED

WELL-LOCATED Southern town wants industry. Will furnish plant, moving expenses, additional capital and other concessions.

INDUSTRIAL SERVICE CORP.,
Asheville, N. C.

FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

PATENT ATTORNEYS

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

PATENTS—Booklet free. Highest references. Best results. Promptness assured. **WATSON E. COLEMAN**, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS Charlotte office convenient to South. **PAUL B. BATON**, Registered Patent Attorney, 218 Johnston Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. **PATENTS, TRADEMARKS, COPYRIGHTS**. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

AGENCIES WANTED

WELL ORGANIZED FIRM, established 14 years, good connections with architects and contractors in Florida, splendid sales force, will represent manufacturers of building equipment, specialties, furnishings and supplies. **AGENCY DEPT. MIAMI TILE & MARBLE CO.**, 1038 N. E. Second Avenue, Miami, Fla.

REPRESENTATIVES WANTED

WE MAKE Water Conditioning Chemicals and desire to communicate with men now active, calling on the power trade or handling boiler room specialties. Work is highly remunerative. Address No. 9080, care of Manufacturers Record, Baltimore.

PUMP MANUFACTURER has several open territories in South. He would like to contact with sales representatives, covering building engineers, municipal engineers, and industrial. Line includes high and low pressure Centrifugal Pumps of capacities up to 3000 GPM, non-clogging pumps up to 7500 GPM, and axial flow pumps for low heads up to 20,000 GPM. A profitable line of equipment for a good Engineers Sales Organization. Address No. 9091, care Manufacturers Record, Baltimore, Md.

SITUATIONS WANTED

GENERAL FOREMAN—Construction all classes and types of Buildings, Brick, Steel, Stone, Concrete, Water Storage, Sewer Disposal, Bridges, Concrete a Specialty; go anywhere. Suit General Contractor. Apply **TOM H. MARTIN**, 150 Key Boulevard, Clarendon, Va.

POSITION WANTED

Sales Engineer of 18 years experience in Southeastern States using Washington as headquarters. Widely acquainted with mill supply trade, machine shops, industrial plants; also drafting and estimating ability. Desires permanent connection with manufacturer that can use this experience. Address No. 9096, care Manufacturers Record.

CONSTRUCTION EXECUTIVE—20 Years experience in States, and Latin America. General construction, Fireproof Buildings, Difficult Foundations, Hydro Electric Projects, Bridges, Docks, and Railroad construction. Know the business inside and out. Speak Spanish. Will go anywhere. References. Address No. 9095, care Manufacturers Record, Baltimore, Md.

CONSTRUCTION SUPT.—15 years experience as superintendent of construction on water lines, sewers, filter plants, sewage disposal, excavation, paving, concrete construction. Economical; good organizer and pusher. Can estimate and handle general business. Graduate civil engineer; married; age 36. Desire permanent connection with contractor or industrial outfit that can use this experience. Address No. 9086, care of Manufacturers Record, Baltimore, Md.

MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty-one years. Send only name and address for details.

R. W. BIXBY, INC.,
103 Downtown Bldg. Buffalo, New York

MACHINERY AND SUPPLIES

ELECTRICAL MACHINERY For Sale—Motors and Generators, A.C. and D.C. New and Rebuilt. Attractive prices. Large Stock. Write for our Price List. **V. M. NUSSBAUM & CO.**, Fort Wayne, Ind.

FOR SALE—1 No. 6 Black & Decker Electric Hammer, with set of 10 drills. Slightly used but in excellent condition. \$145.00. **HARRISON HDW. & FURN. COMPANY**, St. Petersburg, Fla.



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



Write for BIG Bargain List

Cutting and Welding Torches, Welding Generators, Paint and Lacquer Spray Guns, Portable Carbide Lights and Oil Burners.

For Sale at 1/2 Usual Prices

Unused exhibition equipment—also trade-in and reconditioned apparatus. Equal to new.

The
ALEXANDER MILBURN CO.

Established 1907
1416-1428 W. Baltimore St., Baltimore, Md.

—TRANSFORMERS—
SALES AND REPAIR SERVICE

TWO COMPLETE 66 and 33 Kv. SUBSTATIONS
Full description and price on request.



A complete stock of transformers 1 to 1000 kva. Modern methods make our repair service second to none. Special service on breakdown jobs.

All transformers guaranteed for one year.
Write for Catalog. No. 124-E.

The Electric Service Company, Inc.
"America's Used Transformer Clearing House"
212 Walnut St., Cincinnati, Ohio





RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



IF IT'S NEW PIPE OR SECOND HAND

black or galvanized up to 12"—we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

HUDSON PIPE AND SUPPLY COMPANY
34th Street and C. R. R. of N. J. Bayonne, N. J.

SELL THAT IDLE MACHINERY

Tell our readers about it through

THE RESALE DEPARTMENT

it may just suit the needs of someone.

Ask for rates

MANUFACTURERS RECORD, BALTIMORE, MD.

BOILERS

- 2—400 H.P. Springfield water tube, 225 lb. pressure, ASME.
- 1—150 H.P. 72"x18' Return tubular, 150 lb. pressure, ASME.
- 1—125 H.P. Locomotive, 125 lb. pressure, ASME.

GENERATOR SETS

- 200 KVA 220 vt. 3 ph. 60 cy. Burke with Filer Stowell Uniflow Engine.
- 2—50 KVA 220 vt. 3 ph. 60 cy. Ridgway with Ridgway Engine.

HEATERS

- 2—1000 H.P. Cochrane open type feed water heaters.

ALMOST NEW METAL WORKING MACHINES

- 48"x16' Lodge & Shipley geared head engine lathe.
- 9/16" and 3/8" Gridley 4 spindle automatics.
- No. 6 Warner & Swasey turret lathe, 2 1/4" cap.
- 4' Cincinnati Bickford radial drill, A.C. motor drive.
- 24" Southwark punch, arch jaw, mtr. dr., cap. 3/4"x3/4".
- 24" Gould & Eberhardt shaper, belt drive.
- 2000 lb. Chambersburg double frame steam hammer.

THE O'BRIEN MACHINERY CO.

113 North Third Street

Philadelphia, Pa.

FOR SALE ICE MACHINES

5—25 Tons Excellent Condition With or Without Motors.

Md. Pipe & Steel Corp.,
Ostend & Scott Sts., Baltimore, Md.



Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

Second Hand and New Wrought Steel **PIPE** Overhauled New Threads and Couplings

Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
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PIPE FOR EVERY PURPOSE

JOS. GREENSPON'S SONS
IRON AND STEEL COMPANY
ST. LOUIS, MO. - TULSA, OKLA. - NEW YORK CITY

PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to 3/4".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20", and 24". Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

LOCOMOTIVE BOILER

1—125 H.P. Nagle A.S.M.E.—125 lb. pressure. Complete with stack.

M. J. HUNT'S SONS
1620 N. Delaware Ave. Phila., Pa.

GASOLINE LOCOMOTIVES

For Sale—At third price

Three new 8 ton 2 ft. gauge Whitcombes. Can be changed to 42" gauge. These locomotives are new, unused and are in absolutely splendid condition.

W. M. SMITH & CO.
Birmingham Alabama

SATISFACTION

ALBERT PIPE SUPPLY CO., INC.

NEW-RECLAIMED-USED

PIPE

ALL SIZES CUT TO SKETCH AND STOCKED

BERRY & NORTH 13th STS.
BROOKLYN, N.Y.

GUARANTEED

SERVICE PRICES

PIPE NEW SECOND HAND

Overhauled and Tested
New Threads and Couplings
Established 1904

**Albert & Davidson
Pipe Corp.**

Second Ave., 50th-51st St., Brooklyn, N. Y.
Telephone Sunset 1900



RAILROAD AND CONTRACTORS' EQUIPMENT



FOR SALE OR LEASE

We have always on hand for sale or lease, Jordan spreaders, sixteen and twenty yard air dump cars, Model-75, Lorain gasoline shovel ready for immediate delivery in first class condition.

W. VA. CONSTRUCTION COMPANY
First Huntington National Bk. Bldg., Huntington, W. Va.

IDLE MACHINERY

can be disposed of if you tell our readers about it—rates on request.

Advertise it in the

MANUFACTURERS RECORD



RAILROAD AND CONTRACTORS' EQUIPMENT



Shovels or Cranes

FOR SALE

1—Factory rebuilt Lima 1½ cu. yd. capacity. This machine can be equipped with either shovel, clamshell, dragline or drag shovel attachments. Very reasonably priced. Carries new machine guarantee. Located at New York.

1—Gas-Air Erie shovel 1 yd. capacity, A-1 condition. Ready for service. Located Richmond, Va.

Marion No. 32 Electric Shovel, 1½ cu. yd.; 50 hp. G. E. Motor; 3 phase, 60 cycle, 440 v. Splendid condition. Located New York City.

Complete Shovel Attachment for Type "O" Thew. Also, attachment for Type B and B-2 Eries located in New Jersey. Decided bargains.

P & H 1½ yd. gas shovel. Excellent condition, very attractive price. Located South Kearny, N. J.

1—Linn Tractor, 6-yd. capacity, with Waukesha Motor. Machine in very good condition. Priced to sell quickly. Located New York State.

We have both Steam and Gasoline Excavators ranging from ½ to 1½ cu. yd. capacity in various parts of the country that will be sold at extremely low prices or leased with leased payments made applying on purchase price.

LIMA EXCAVATOR SALES AGENCY

Eastern Offices and Warehouse,
Lima Trust Bldg. 317 Frelinghuysen Ave., Newark, N. J.
Tel. Main 4824 Tel.: Waverly 2-0640

Wire or phone at our expense.

PUMPS

1—Steam Turbine Centrifugal Pump. Turbine—"Terry," 96 H.P., 200 lb. steam pressure, 3,000 R.P.M., Pump 4 in. suction, 3 in. discharge, 2 stage, total head 500 ft.

1—Steam Turbine Centrifugal Pump. Turbine—"Terry," 85 H.P., 175 lb. steam pressure, 2,500 R.P.M., Pump type 4 S.T.—3 stage, 450 gallons per minute, total head 500 ft.—2,500 R.P.M., 6 in. suction, 4 in. discharge.

1—16x9½x10, 500 gallons per minute Gardner Fire Underwriter Fire Pump, complete.

1—Worthington as above.

T. G. ADAMS MACHINERY CO.

220 W. Bay St., Savannah, Ga.
P. O. Box 1597

BOILERS

High pressure water tube and H R T boilers at unbelievable prices. We have them in practically every southern state and are scrapping all but the very best. Write us your requirements.

W. M. SMITH & CO.
Box 1709 Birmingham, Ala.

LOCOMOTIVE CRANE FOR SALE

Browning Steam Locomotive Crane No. 663—4-wheel, 15 tons capacity with bucket. Price \$2,000.00 at Miami, Fla. For information wire or write

Miami Towing and Lighterage Corp.
764 NW. N. River Drive Miami, Fla.

For Bigger Profits In 1931!

Use an E. E. D. Rebuilt Excavator

—BUY or RENT WITH OPTION TO PURCHASE—

P&H Model 400 Dragline, ¾ yard, in good shape, ready to go. Located at Chicago plant.

Northwest Model 105 1 yard Crane. Fully reconditioned. At Hoboken plant.

P&H Model 600 1 yard Shovel. Thoroughly overhauled and in very good operating condition. At Hoboken plant.

Marion No. 32 1 Yard Steam Shovel on full crawlers. Ready for immediate delivery. An exceptional bargain, located at Hoboken plant.

P&H Model 400 ¾ yard Clamshell, 35 foot boom. Has been very carefully reconditioned. At Hoboken plant.

Erie Gas-Air—1 yard Shovel or Crane. In good working order. Will sell cheap. At Chicago plant.

Liberal Terms—Large Stock to Pick From—Write or Wire At Our Expense

EXCAVATING EQUIPMENT DEALERS, INC.

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1706 Willow Ave. 2248 E. 37th St. 2657 Ninth St. 5905 Greenfield Ave. 1040 W. Division St.



50 TONS
100 LB. RELAYING RAILS

150 TONS
80 LB. RELAYING RAILS

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Commercial Trust Bldg. Philadelphia

RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may have material in stock near you.

WE BUY RAILS FIT TO RE-LAY
ROBINSON & ORR

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.
New Frogs and Switches at low prices.

If you want to get
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MANUFACTURERS RECORD
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36" PORTABLE TRACK

25 lb. rails—7 steel ties per 15 ft. section. Over ten miles, located Ocala, Fla. Also locomotives, cars, cranes and shovels.

EQUIPMENT CORPORATION OF AMERICA
1166 So. Washtenaw Ave., Chicago

RELAYING RAILS — SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO.

P. O. Box 5253 Boston, Mass.

No. 1½ American Plain Miller, excellent. No use to pay top prices for new Machinery, etc., when you can save perhaps ½ or more on Good Used.

ZELNICKER IN ST. LOUIS

33 years in Rail, Constructors & Railroad Equipment, Steel Piling, Tanks, Pipe, Oil Engines.
Our 422d Bulletin Now Ready and Free

FOR SALE

Surplus Construction Equipment

1½ yd. Steam Dipper Dredge, barges, and other floating equipment. Gas and Diesel combination shovels and Draglines from ¾ to 2 yard capacities.

Tractors, Trailers, Graders, Air Compressors and other miscellaneous construction equipment.

Information and prices upon request.

DIXIE ROAD BUILDERS, INC.
832 N. W. 12th Ct., Miami, Florida

STEEL SHEET PILING

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SOLD, BOUGHT, REPURCHASED

Stocks at Principal Points throughout the Country for prompt shipment. We buy Piling located anywhere.

HYMAN-MICHAELS COMPANY

St. Louis CHICAGO New York
Houston San Francisco Seattle

FOR SALE

P. & H. Model 208, ¾-yd. Dragline. Byers, 10-ton Caterpillar Crane, ¾-yd. Clam. O. & S. 23½-ton Loco. Crane 50' Boom. 16—12 yd. Western Steel Beam Dump Cars. 10—50-ton capy. All Steel Twin Hopper Cars. 75-ton, 20x26" 6-Driver Switcher, A. S. M. E. 50-ton, 18x24" 6-Driver Switcher. 93-ton, 20½x28" Mikado (2-8-2) BUILT 1922.

35-ton, 18x20" 4-Driver Sad. Tank. 56-ton, 18x24" 4-Driver Sad. Tank. WE HAVE OVER FORTY LOCOMOTIVES IN STOCK. REBUILT AND READY ALL TYPES. 10 TO 100 TONS

Southern Iron & Equipment Co.,
Atlanta, Ga.

RUSSELL FRESNO-DRAG AND WHEEL SCRAPERS

ROAD PLOWS
ROOTER PLOWS

ROAD DRAGS
TONGUE
SCRAPERS



No. 14-3-Blade Road Drag

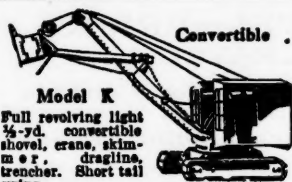
B. W. & LEO HARRIS CO., Manufacturers
MINNEAPOLIS Write for catalog No. 30 MINNESOTA

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ERIE**
**SHOVELS
CRANES
DRAGLINES
DREDGES**

KNOWN RELIABILITY!

Bucyrus-Erie equipment is known the world over, for dependable, low-cost operation. Shovels, Draglines, Cranes—all sizes—Gas, Diesel, Electric, Gas + Air, Diesel + Air, Steam. Also Railway Cranes, Spreader Plows, etc. Write for bulletins.

BUCYRUS-ERIE COMPANY
So. Milwaukee, Wis., Evansville, Ind., Erie, Pa.



Model K
Full revolving light
1/2-yd. convertible
shovel, crane, skim-
mer, dragline,
trencher. Short tail
swing.

Convertible . **POWER SHOVELS**
Cranes, Trenchers
SKIMMERS

Full or part circle
BAY CITY SHOVELS, Inc.
Bay City, Mich.

EASTON CARS



for every industrial purpose
Any type to your or our design

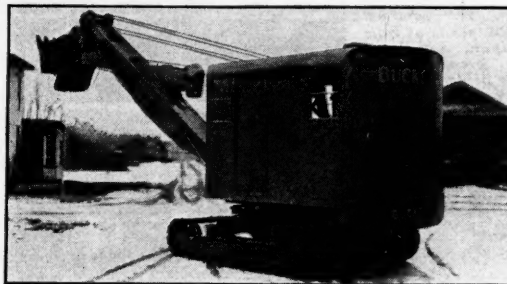
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10 E 40th Street, New York City. EASTON, PENNA.
PHILADELPHIA PITTSBURGH CHICAGO

INDUSTRIAL CAR EQUIPMENT



THE ATLAS CAR & MANUFACTURING CO.
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Buckeye's 3/8-Yard Utility Unit Offers Dependable Earning Power Plus



Into 3/8-yard full revolving Model O is built the exact dependability—earning power—which has always distinguished Buckeyes. It offers even more—Crane, Clamshell, Dragline or Shovel, all as required in a day's operation. This unit now provides a greater range of usefulness than ever before available in any equipment of its class—at its price.

We should be glad to send you complete specifications and the surprising price of this newest Buckeye.

THE BUCKEYE TRACTION DITCHER CO.

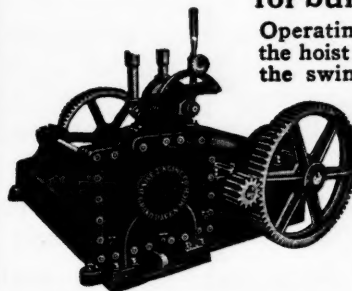
Findlay, Ohio

There's a Buckeye Sales and Service Office near You

DAKE SWINGING ENGINES

for bull wheel derricks

Operating independently of the hoist engine, they cut down the swinging time and speed up derrick work.



The engine has no dead centers and starts instantly from any position permitting quick accurate spotting of the load.

Also made for Electric Drive. Send for catalog.
DAKE ENGINE CO., Grand Haven, Mich.

LARGEST PLANT

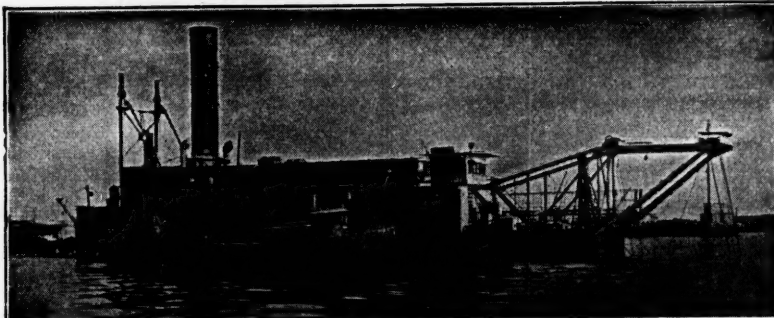
Filling,
Land Reclamation,
Canals
and Port Work

River and Har-
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Deep Waterways
and Ship Channels.

Correspondence Invited
from Southern Officials
and Corporate and Pri-
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where.

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21 Park Row

DREDGING



LONGEST EXPERIENCE

We are especially
equipped to exe-
cute all kinds of
dredging, recla-
mation and port
works in South-
ern waters.

CONTRACTORS
TO THE
FEDERAL GOVERNMENT

Atlantic, Gulf and Pacific Company

HOUSTON
Scanlan Bldg.



Above—4600 yards of blue clay, hardpan, and limestone are excavated by Spaders for bridge footings. Spaders broke the limestone, radially, from holes made with a Sullivan drill. At right—Hand labor with Spaders takes the place of heavy ditching machinery on trench for 40-inch water main.

At left—Bull point Spaders drive sewer tunnel rapidly in dry clay.

Save $\frac{1}{2}$ the Labor on These Excavating Jobs

MANHOLES, Culverts, Narrow Pipe Trenches, Small Tunnels, Caissons. These and other excavating jobs hold real profits for contractors who use air Spaders.

One man and a Spader does the work of two men with picks and shovels. In cramped quarters, or in extra hard material, the saving in labor is even greater.

Spaders are powerful diggers, easy to handle; and they are adapted to any class of work. Twelve men recently dug bridge footings 18x82x15 feet deep in blue clay, hardpan, and limestone, in 48 hours.

Spaders can be had with 4, 5, or 6 inch spades, or with bull points, asphalt cutters, or chisels.



Ability of Spader to dig narrow trench saves pavement replacement costs.

They can be had with short shanks, or with long shanks and tee-handles to save the operator's back in open trench work.

Three different throttles are available.

A 220-foot Vibrationless compressor will run six Spaders.

You will be interested in the new Sullivan Spader Picture Book 87-A

SULLIVAN

Trade Mark

air power equipment

SULLIVAN MACHINERY COMPANY

718 Wrigley Bldg.,
Chicago

30 Church St.,
New York

We produce in quantities to meet your requirements

SAND and WASHED GRAVEL

QUICK shipments by rail from Baltimore and North East, Md. or in scow and barge lots. Truck or rail shipments from Baltimore, Md.

The Arundel Corporation

MAIN OFFICE: ARUNDEL BUILDING
BALTIMORE, MARYLAND

Branches: New York, Norfolk and Miami



for economy and permanence in Road Building and General Construction

WOODSTOCK SLAG CORP.

Southern Railway Bldg., Birmingham, Ala.

SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings

Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.

Crushed Stone Mascot Chatts Roofing Gravel Asphaltic Roadway Gravel Asphalt Filler Dust



AMERICAN LIMESTONE COMPANY
KNOXVILLE TENNESSEE

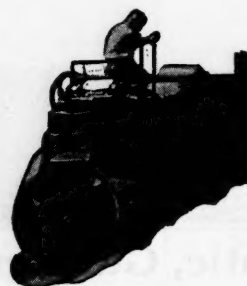
Tamping Costs Go Down!

There's far less time put in on hand tamping when you put down the asphalt with an ERIE Roller—

Better clearance, easier steering, shorter turning radius allow the ERIE to get into the close places and compact the asphalt close to curbs, corners, manholes, etc.

Write today for Bulletin "M".

ERIE MACHINE SHOPS
Erie, Pa.



More holes to the blast.. Fewer misfires!

with these new and improved

BLASTING MACHINES

*Developed by General Motors
for du Pont, these new blasting machines
are now offered to save you money
in blasting operations!*

The NEW du Pont No. 5 Blasting Machine . . . known as the No. 5 G. M.—because it was designed by General Motors . . . has proved highly successful in many blasting operations where it is necessary to fire a large number of holes at one time.

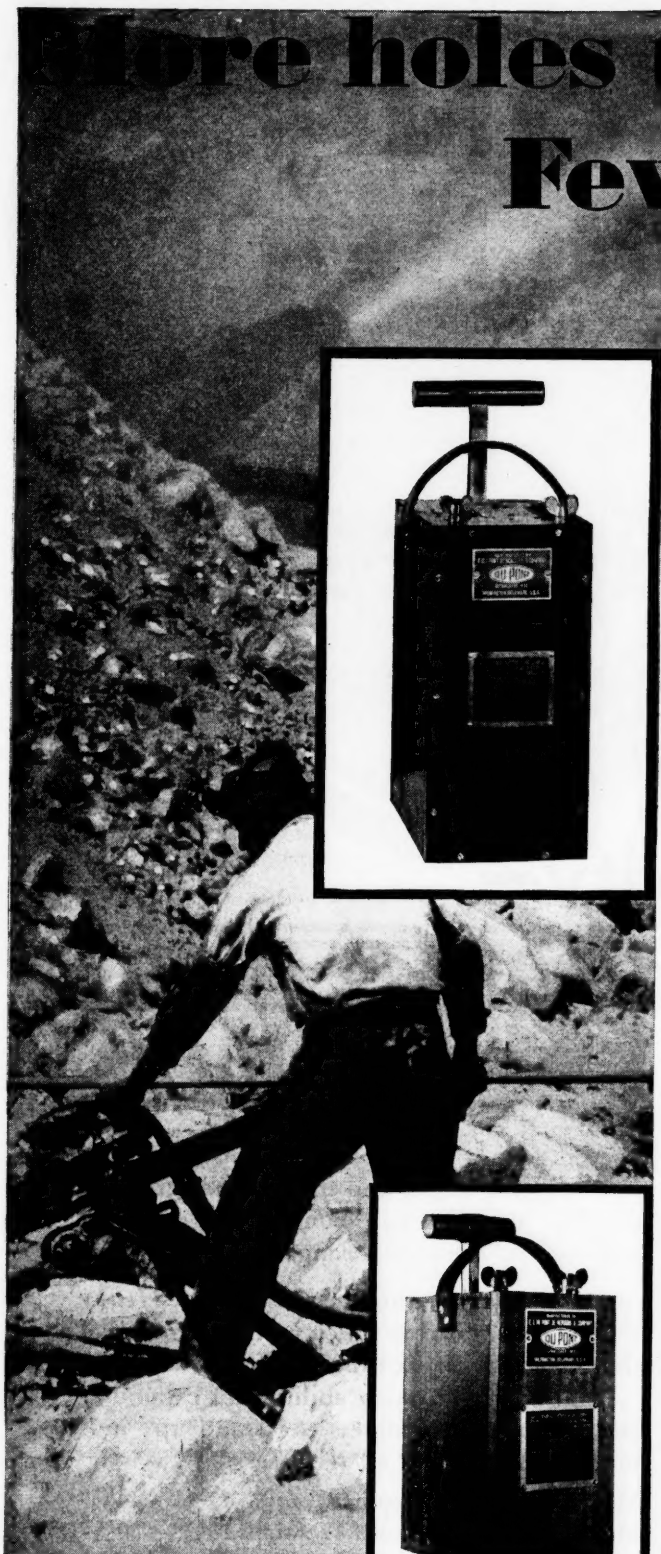
Here are the special new features that will recommend No. 5 G. M. to you:

- (1) A two-point clutch which makes it possible to send the current out on the firing line at its peak.
- (2) A laminated armature and solid core field for building up the maximum current.
- (3) A one microfarad condenser to store up the current until the moment of discharge.
- (4) Most important of all, a new eight-point breaker of unique design which utilizes the current heretofore wasted as a large spark at the completion of the stroke.

Field windings on the new machine are so placed as to increase its efficiency. There are ball bearings on the armature shaft; and a thrust bearing for the rack bar in the direct line of the thrust instead of offset as formerly.

The new machine has a rated capacity of 100 electric blasting caps. As a matter of fact, it has often fired as many as 125 holes connected in series. The weight of this machine is a little less than 36 pounds.

In quarry and construction work, No. 5 G. M. has proved particularly useful. Its large volume of current at sufficient voltage reduces the chances of misfires from electric leakage.



A number of the features from the No. 5 G. M. machine have been incorporated in the du Pont No. 2 and No. 3 Blasting Machines. These machines are now being manufactured with a two-point clutch, an eight-point breaker switch and a condenser. These improved machines materially reduce the chances of misfires in thirty- and fifty-hole shots.

E. I. DU PONT DE NEMOURS & CO., INC.
Explosives Department
WILMINGTON, DELAWARE



PARSONS

HEAVY DUTY TRENCHER



Low Center of Gravity— Stamina—Power—Speed -- to take what comes

HUGS the grade because of low, compact design and low center of gravity!

Digs its way up and down grade because it has the *power* and the range of digging speeds to meet any digging condition, high speed in easy soil and slow, irresistible power for the tough spots!

Models 25 and 31—Two "Go-Through" Trenchers!

Model 25, a versatile performer on a wide range of medium sized jobs, and Model 31, the largest full multiplane trencher built.

Both have Parsons offset boom, which digs at center or at either side of the machine. This and the quick shift conveyor to either side permits trenching close to poles, buildings, etc.

And with the telescopic boom always at right digging angle, and the wide selection of digging, traction and conveyor speeds the Parsons has the widest range of adaptability!

Outstandingly the Parsons is the *Heavy Duty Trencher* from which more is demanded than from any other type or make of trencher — and in power, adaptability and capability and in rugged sturdiness to "stand up" it is outstanding among all trenchers.

Model 25—Trench Depth 10', width 15½"—44½"

Model 31—Trench Depth 12', width 19½"—50½"

Model 35—Pipe Line Special. Cuts up to 15' deep and 4' wide.

Write for special 25 and 31 catalog.

National Equipment Corporation

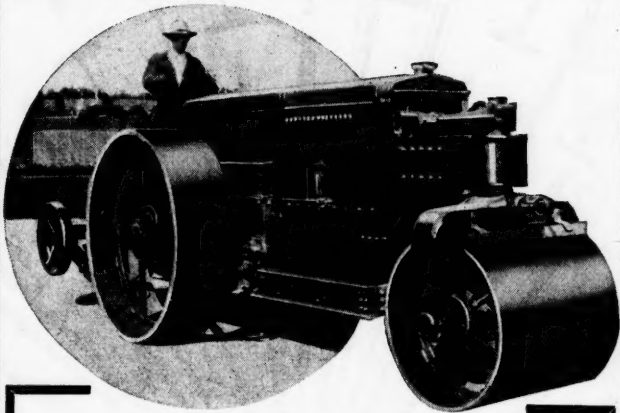


N. 30th St. & W. Concordia Ave. *Milwaukee*

J. L. Hart Machinery Co., So. Florida & Eunice Aves., Tampa, Fla.; The Young & Vann Supply Co., 1725 First Ave., Birmingham, Ala.; Wilson-Weesner-Wilkinson Co., 108 Fatherland St., Nashville, Tenn.; Graham B. Bright, 901 Electric Bldg., Richmond, Va.; D. C. Elphinstone, Inc., 120 S. Calvert St., Baltimore, Md.; W. C. Caye & Co., Division of Wilson-Weesner-Wilkinson Co., 160 Walker St., Atlanta, Ga.; General Equipment Machinery Co., Inc., 116 N. E. Sixth St., Miami, Fla.; Carolina Contr. Equip. & Supply Co., P. O. Box 576, 824 Lady St., Columbia, S. C.

A6244-I

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WHEN there is a time limit to consider . . . When every hour lost is usually a serious matter . . . Then does the contractor appreciate the rugged reliability of his Buffalo-Springfield roller.

Whether on new construction or maintenance, the Buffalo-Springfield develops the flawless performance that meets every requirement with true economy.

Built in a wide range of sizes. Steam and motor driven. Three wheel and tandem. Scarifier and other attachments optional. Write for illustrated booklet.

The Buffalo-Springfield Roller Co.
Springfield, Ohio

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At this city Kahn & Feldman are spinning silk. The Viscose Company, world's largest manufacturers of rayon, are producing "Crown Rayon."

Executives are requested to investigate the advantages of this, the gateway City between the Central West and the South.

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They get
"A Mouthful at Every
Bite" and More Bites
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Faster Operation
Longer Life
Guaranteed Against
Breakage

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for a future home

Back in 1914 under the caption, "The Call of Florida," the late Richard H. Edmonds wrote:

"In the past the romance of Florida appealed to the people of the country. They thought of its ideal climate, its outdoor life; of the flowers and palms in the months when biting, blasting blizzards make life almost unendurable in many other sections, or they thought of Florida as a place tinged with the romance and likewise with the profit of orange and grapefruit growing.

"Now thousands are thinking of Florida not only for these reasons, but because they realize that it possesses a variety of resources which make possible the widest and most profitable diversity of agriculture and manufactures."

An increase of 51 per cent in Florida's population during the past ten years proves that half a million people did more than just "think" of Florida during that period.

Make your Florida thoughts a reality. At least pay us a visit.

We will gladly give agricultural information and send literature about our section—the East Coast of Florida.

Write—MODEL LAND CO.—Flagler System
St. Augustine, Florida



NORFOLK has been endowed with one of the finest natural harbors in the world. It is blessed with an equable climate that allows maximum movement of ships at all seasons. The navies of the world could simultaneously swing wide in Norfolk's anchorage grounds. The world's largest ships can navigate easily its deep, fog-free channels. Yet all these tremendous advantages would be cancelled were it not for the fact that Norfolk's natural advantages are equalled by its magnificent railway facilities.

At Norfolk the exchange of freight from hold to wheel and from car to deck is accomplished with utmost dispatch. Eight great trunk line railways serve the port. These railways are interconnected by a Belt Line Railroad which in turn connects with manufacturing plants and ship terminals. The railroads serving Norfolk are as follows:

ATLANTIC COAST LINE RAILROAD, from Norfolk to the South and Southwest, traversing the cotton and tobacco-growing states, as well as the lumber-producing areas of that territory.

CHESAPEAKE AND OHIO RAILWAY, with rails through Virginia, West Virginia, Ohio, Indiana, Illinois, and Kentucky, serves vast coal fields, manufacturing, and agricultural areas.

NORFOLK AND WESTERN RAILWAY, to the Middle West, with connections to the South and Southwest, serving the bituminous coal fields of Virginia and West Virginia, and important agricultural and manufacturing areas.

NORFOLK SOUTHERN RAILROAD, with rails traversing eastern and central North Carolina and eastern Virginia, with important tobacco, cotton and lumber regions.

PENNSYLVANIA RAILROAD, reaches practically every important point in the Middle Atlantic and Central States.

SEABOARD AIR LINE RAILWAY, to the South and Southeast, serving the port from the cotton, tobacco, and lumber-producing fields.

SOUTHERN RAILWAY, with lines through the entire territory east of the Mississippi River and south of the Ohio River.

VIRGINIAN RAILWAY, extending from Norfolk to Deepwater, West Virginia, connecting with important lines to the west. It taps the great bituminous coal fields of West Virginia.

All of these lines and their connections provide unsurpassed through service to and from all parts of the continental United States and adjacent foreign countries.

In this day of keen competition, when time saved is money earned, when the sure, certain, safe movement of freight is of such vital moment . . . the fact that Norfolk affords just such freight service is one that demands the investigation of shippers, manufacturers, and carriers. Detailed information on what Norfolk can do for you will gladly be furnished.

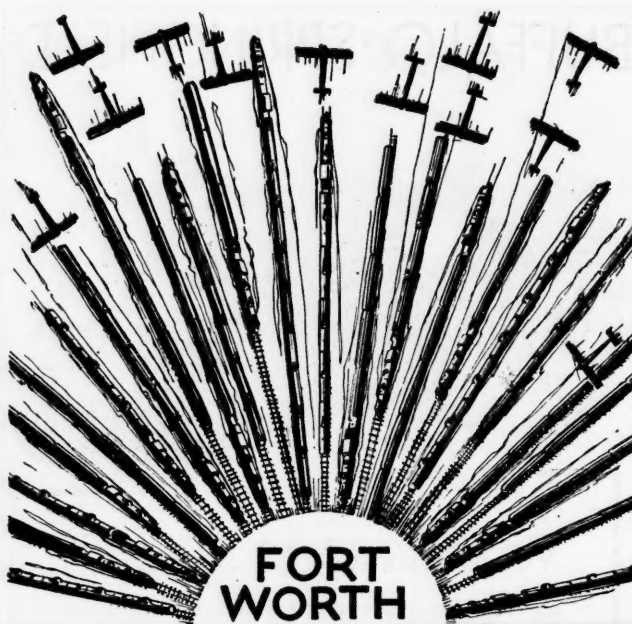
**NORFOLK PORT-TRAFFIC
COMMISSION
NORFOLK, VIRGINIA**



PORT of NORFOLK
WHERE CLIME AND TIDE WAIT ON MAN

Write for illustrated Booklet and further information on the Port of Norfolk

(Ad. Bd. N-P C of C adv.)



**THE DAWN OF A NEW
INDUSTRIAL ERA
IN FORT WORTH**

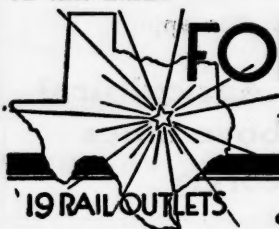
24 RAIL OUTLETS 12 AIR LINES

With 19 rail outlets already serving Fort Worth and construction on 5 additional lines now under way or about to start, Fort Worth will have the equivalent of 24 rail outlets. These new extensions will open up fabulously rich sections in West Texas and central and Western Oklahoma and involve more than 1200 miles of new lines which will be built at a cost to exceed \$50,000,000.

12 air lines and many motor-bus and truck lines operating on regular schedules and radiating in every direction complete a transportation system equaled by few cities and surpassed by none.

—but write today for your copy of Industrial Fort Worth and the whole story of this rapidly growing manufacturing and wholesale center. The student of present day industrial conditions will find much of interest—and a wonderful opportunity—in the story of Fort Worth.

12 AIR LINES



FORT WORTH

THE MANUFACTURING AND TRANSPORTATION
CENTRE OF THE SOUTHWEST

For Information, Address Publicity Department
CHAMBER OF COMMERCE, FORT WORTH, TEXAS

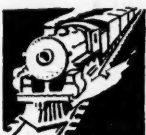
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GALVESTON
meets every
requirement
of the export
and coastwise
shipper



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Keep in touch with this great port. Write us to put your name on free subscription list for "Shippers' Digest of Galveston", published weekly, giving full sailing lists of coastwise and foreign shipping cargo and general port news.

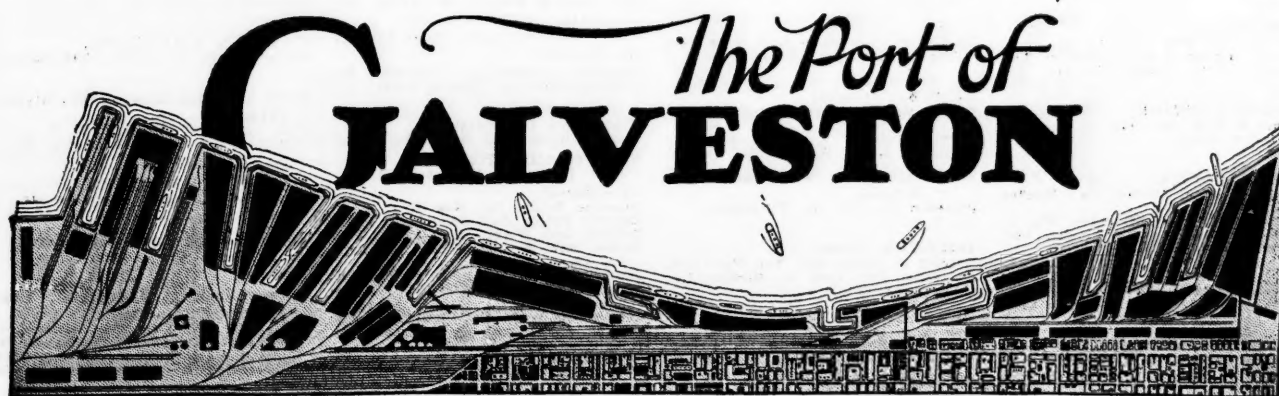
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Ernst & Ernst, New York, N. Y.
Hollowell, Gorham & Co., Greensboro, N.C.
Le Baron, E. T., Jacksonville, Fla.

AERIAL MAPS and SURVEYS.

Airmap Corp. of Amer., Brooklyn, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

De Laval Steam Turbine Co., Trenton, N.J.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Novo Engine Co., Lansing, Mich.
Quincy Compressor Co., Quincy, Ill.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., Wilmerding, Pa.

AIR HEATERS.

Babcock & Wilcox Co., New York.

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International Derrick & Equipment Co., Columbus, Ohio.

AIRPORTS.

Shaw Co., Russell B., St. Louis, Mo.

ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.

Conard, William R., Burlington, N. J.
Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Boney, Leslie N., Wilmington, N. C.
Chase, Wm., J. J., Atlanta, Ga.
Main, Inc., Chas. T., Boston, Mass.
Milburn, Heister & Co., Wash., D. C.
Moyer Co., Tilghman, Allentown, Pa.
Preacher & Co., Inc., G. Lloyd, Atlanta, Ga.
Serrins & Co., J. E., Greenville, S. C.
Wheeler, Walter H., Minneapolis, Minn.

—(Golf Course, Landscape.)

Spoon & Lewis, Greensboro, N. C.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

ARCHITECTURAL IRON WORK.

Dietrich Brothers, Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.

ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.

—(Emulsified.)

Headley Emulsified Products Co., Philadelphia, Pa.

—Filler.

American Limestone Co., Knoxville, Tenn.
Servicised Products Corp., Chicago, Ill.

—Paving.

Barber Asphalt Co., Philadelphia, Pa.

—(Plants.)

Simplicity System Co., Chattanooga, Tenn.

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Hollowell, Gorham & Co., Greensboro, N.C.
Le Baron, E. T., Jacksonville, Fla.

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Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

BACKFILLERS.

Buckeye Traction Ditcher Co., Findlay, Ohio.
Harnischfeger Corp., Milwaukee, Wis.
National Equipment Corp. (Isley, Parsons), Milwaukee, Wis.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKERS and BROKERS.

Provident Saving Bank & Trust Co., Cincinnati, Ohio.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balto., Md.
Baltimore Trust Co., Baltimore, Md.
First and Merchants National Bank, Richmond, Va.

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American Bridge Co., New York, N. Y.
McClintic-Marshall Co., Pittsburgh, Pa.

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Cannors Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
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Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, O.
Virginia Bridge & Iron Co., Roanoke, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

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Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Timken Roller Bearing Co., Canton, Ohio.

—(Line Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

—(Roller.)

Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.

—(Leather, Canvas, Rubber.)

Charlotte Leather Belting Co., Charlotte, N. C.
Republic Rubber Co., Youngstown, Ohio.

—Dressing.

Charlotte Leather Belting Co., Charlotte, N. C.

—Fasteners.

Dixon Crucible Co., Jos., Jersey City, N.J.

—Lacing (Steel Hinges.)

Flexible Steel Lacing Co., Chicago, Ill.

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Harber-Greene Co., Aurora, Ill.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.
Butler Bin Co., Waukegan, Wis.

BLASTING POWDER and Accessories.

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BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

BLOCKS (Chain)

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—(Friction.)

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—(Tackle, for Wire and Manila Ropes.)

Patterson Co., W. W., Pittsburgh.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.
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Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., E. D., Newnan, Ga.
Combustion Eng. Corp., New York, N. Y.
Hedges Walsh Weldner Co., Chattanooga, Tenn.

Lombard Iron Works & Supply Co.

Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.

Schofield's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.

—(Oil.)

Babcock & Wilcox Co., New York.

—(Scotch Marine.)

Lookout Boiler & Mfg. Co., Chattanooga, Tenn.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.
Bardle Machinery Co., The, Cincinnati, O.
Zelnicker Supply Co., W. A., St. Louis.

BOILER SETTINGS.

Babcock & Wilcox Co., New York.
Harblson-Walker Refractories Co., Pittsburg.

—Tubes.

Babcock & Wilcox Co., New York.
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Progressive Mfg. Co., Torrington, Conn.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
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—(Track.)

Sweet's Steel Co., Williamsport, Pa.

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Garraway & Co., S. G., Chicago.
Hanchett Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Nevins & Co., John, Chicago, Ill.
Provident Savings Bank and Trust Co., Cincinnati, Ohio.

BORINGS (Core.)

Kennedy-Riegler Drilling Co., New York City.
Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Kenwood, Inc., Scranton, Pa.

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Old Dominion Box Co., Lynchburg, Va.

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Palmer Asbestos & Rubber Corp., Chicago.

BRASS GOODS.

Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Vitrified, Paving.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—and Clayworking Machy.

Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Asphalt Planking)

Servicised Products Corp., Chicago, Ill.

—(Operating Machinery.)

Earle Gear & Machine Co., Phila., Pa.

—Slabs

Kerlow Steel Flooring Co., Jersey City, N.J.

—Timber.

American Creosoting Co., Louisville, Ky.
Kirby Lumber Co., Houston, Texas.

BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

—(Creosoted Wood.)

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.
Atlantic Bridge Co., Greensboro, N. C.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Champion Bridge Co., Wilmington, O.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
International Derrick & Equipment Co., Columbus, Ohio.
McClintic-Marshall Co., Pittsburgh, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.
Michels Art Bronze Co., Covington, Ky.

BUBBLERS.

Rundie-Spence Mfg. Co., Milwaukee, Wis.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.
Industrial Brownhoist Corp., Cleveland, O.
Owen Bucket Co., The, Cleveland, Ohio.

—(Coal.)

Owen Bucket Co., Cleveland, O.

—(Dredging, Excavating, Sewer, etc.)

Monaghan Mfg. Corp., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.

—(Material Handling.)

Owen Bucket Co., Cleveland, O.

—(Ore Handling.)

Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Rehandling.)

Owen Bucket Co., Cleveland, O.

—(Sand and Gravel.)

Owen Bucket Co., Cleveland, O.

BUILDERS and Contractors.

Cowper Co., Inc., The John W., Richmond, Va.
Moyer Co., Tilghman, Allentown, Pa.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)

Belmont Iron Works, Philadelphia, Pa.
Blaw-Knox Co., Pittsburgh, Pa.
Butler Mfg. Co., Kansas City, Mo.
International Derrick & Equipment Co., Columbus, O.
McClintic-Marshall Co., Pittsburgh, Pa.
Truscon Steel Co., Youngstown, O.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable Sheet Metal.)

Butler Mfg. Co., Kansas City, Mo.
International Derrick & Equipment Co., Columbus, O.

BULKHEADS.

Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.

Trackson Co., Milwaukee, Wis.

BUSINESS METHODS.

Ernst & Ernst, New York, N. Y.

CABLE (Elevator.)

Roebbing's Sons Co., John A., Trenton, N. J.

—(Stud Link.)

Woodhouse Chain Works, Trenton, N. J.

—and Wire (Electric.)

American Steel & Wire Co., Balto., Md.
Roebbing's Sons Co., John A., Trenton, N.J.
Western Electric Co., New York City.

CABLEWAYS (Overhead Suspension.)

Sauerman Bros., Chicago, Ill.

CALCIUM CHLORIDE.

Grasselli Chemical Co., Inc., Birmingham.

CAN and Box-Making Machinery (Tin.)

Bliss Co., E. W., Brooklyn, N. Y.
Robins & Co., A. K., Baltimore, Md.

CANNING MACHINERY.

Robins & Co., A. K., Baltimore, Md.

CAR (Loaders and Unloaders)

Barber-Greene Co., Aurora, Ill.

CARS (Dump, Industrial, Logging and Mine.)

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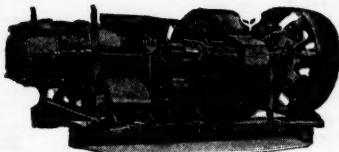
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For Brick, Tile and Block,
from smallest to largest
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Full line equipment.

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Statesville, N. C., U.S.A.



Patterson

Estab. 1858

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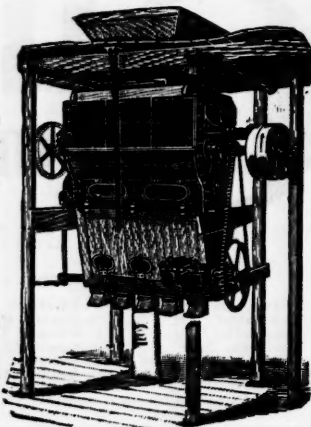
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Walker Electrical Co., Atlanta, Ga.
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Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

—(Crawling Tractor.)

Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

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Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

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Bucyrus-Erie Co., Erie, Penna.
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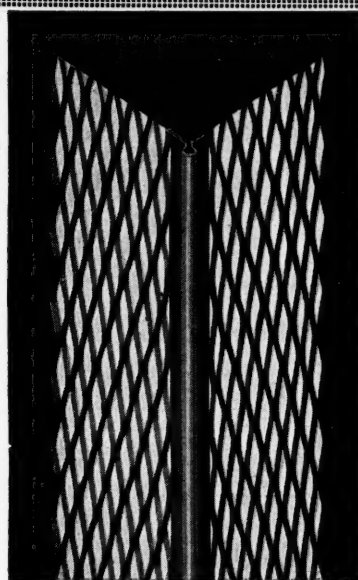
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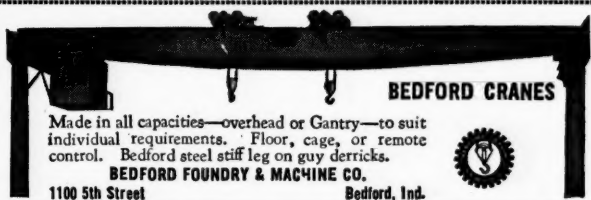
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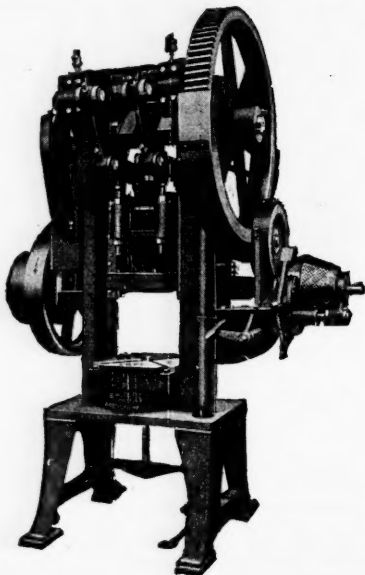
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—(Hand and Belt Power.)
American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.

DRILLING CONTRACTORS.
Kennedy-Rieger Drilling Co., New York City.
Mott Core Drilling Co., Huntington, W. Va.

—(Hydraulic.)
American Elevator & Machine Co., Inc., Louisville, Ky.

ENGINEERS (Airports.)

International Derrick & Equipment Co.,
Columbus, Ohio.
Lockwood Greene Engrs., Inc., New York.
MacElwee & Crandall, Inc., Cambridge,
Mass.
Shaw Co., Russell B., St. Louis, Mo.

—(Appraisal.)

Fay, Spofford & Thorndike, Boston, Mass.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
May, Inc., Geo. S., Chicago, Ill.
Pender, W. R., Houston, Texas.
Sanderson & Porter, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New
York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Aviation.)

Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)

Atlantic Bridge Co., Greensboro, N. C.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Southern Erectors, Inc., Tampa, Fla.
Steel & Lobby, Knoxville, Tenn.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.
Wheeler, Walter H., Minneapolis, Minn.
Whitman, Requaardt & Smith, Balto., Md.

—(Chemical.)

Barrow-Agee Laboratories, Memphis, Tenn.
Dow & Smith, New York, N. Y.
Moss, Jr., W. Wade, Columbus, Ga.
Pittsburgh Testing Laboratories, Pitts-
burgh, Pa.
Southern Products Corp., New Orleans.

—(Civil.)

Airmap Corp. of Amer., Brooklyn, N. Y.
Charlton & Davis, Ft. Lauderdale, Fla.
Fuller & McClintock, New York, N. Y.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Hills Co., George B., Jacksonville, Fla.
MacElwee & Crandall, Inc., Cambridge,
Mass.
Main, Inc., Chas. T., Boston, Mass.
Spoon & Lewis, Greensboro, N. C.
Steel & Lobby, Knoxville, Tenn.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.

—(Consulting.)

Airmap Corp. of Amer., Brooklyn, N. Y.
Barstow & Co., W. S., New York City.
Charlton & Davis, Ft. Lauderdale, Fla.
Converse & Co., J. B., Mobile, Ala.
Cramer, Robert, Milwaukee, Wis.
Engineering Service Corp., Houston, Tex.
Hanza Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Pender, W. R., Houston, Texas.
Smith, Elroy G., Augusta, Ga.
Stillman & Van Sice, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.

—(Cost.)

May, Inc., Geo. S., Chicago, Ill.

—(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Bylesby Engineering and Management
Corp., Chicago, Ill.
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hanza Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sullivan & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
Wheeler, Walter H., Minneapolis, Minn.
White Engineering Corp., J. G., New York.

—(Drainage and Irrigation.)

Cramer, Robert, Milwaukee, Wis.
Fuller & McClintock, New York, N. Y.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.

—(Efficiency.)

Ernst & Ernst, New York, N. Y.
Whitman, Requaardt & Smith, Balto., Md.

—(Electrical.)

Engineering Service Corp., Houston, Tex.
Hoosier Engineering Co., Chicago, Ill.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.
Webb Electric Co., Anderson, S. C.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

**—(Electric-Light and Power
Plants.)**

Barstow & Co., W. S., New York City.
Bylesby Engineering and Management
Corp., Chicago, Ill.

Cramer, Robert, Milwaukee, Wis.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
White Co., Gilbert C., Durham, N. C.

—(Flood Control.)

Hanza Engineering Co., Chicago.

—(Gas.)

Bylesby Engineering and Management
Corp., Chicago, Ill.
Huey, S. E., Monroe, La.

—(Geological.)

De Kabb, Courtenay, New York City.
Freohling & Robertson, Richmond, Va.
Moss, Jr., W. Wade, Columbus, Ga.
Wadleigh & Bailey, Washington, D. C.
Withers, R. S., Jackson, Miss.

—(Harbor Improvements.)

Engineering Service Corp., Houston, Tex.
Fay, Spofford & Thorndike, Boston, Mass.

—(Heating.)

Pender, W. R., Houston, Texas.
Wiley & Wilson, Lynchburg, Va.

—(Hydraulic.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Fuller & McClintock, New York, N. Y.
Hanza Engineering Co., Chicago.
Main, Inc., Chas. T., Boston, Mass.
Whitman, Requaardt & Smith, Balto., Md.

—(Hydro-electric.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Bylesby Engineering and Management
Corp., Chicago, Ill.
Hanza Engineering Co., Chicago.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Sullivan & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.

—(Ice and Refrigerating.)

Engineering Service Corp., Houston, Tex.

—(Industrial Plants.)

Barstow & Co., W. S., New York City.
Conner, Older & Quinlan, Inc., Chicago.
Converse & Co., J. B., Mobile, Ala.
Fay, Spofford & Thorndike, Boston, Mass.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hills Co., George B., Jacksonville, Fla.
International Derrick & Equipment Co.,
Columbus, Ohio.
Lockwood Greene Engrs., Inc., New York.
MacElwee & Crandall, Inc., Cambridge,
Mass.
Main, Inc., Chas. T., Boston, Mass.
Preacher & Co., Inc., G. Lloyd, Atlanta.
Sanderson & Porter, New York, N. Y.
Sullivan & Co., J. E., Greenville, S. C.
Smith, Elroy G., Augusta, Ga.
Turner, C. A. P., Minneapolis, Minn.

—(Industrial Survey.)

Converse & Co., J. B., Mobile, Ala.
Lockwood Greene Engrs., Inc., New York.
Wadleigh & Bailey, Washington, D. C.

—(Inspection and Tests.)

Barrow-Agee Laboratories, Memphis, Tenn.
Conard, William E., Burlington, N. J.
Cramer, Robert, Milwaukee, Wis.
Dow & Smith, New York, N. Y.
Freohling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Moss, Jr., W. Wade, Columbus, Ga.
Pender, W. R., Houston, Texas.
Pittsburgh Testing Laboratories, Pitts-
burgh, Pa.
Southwestern Laboratories, Ft. Worth, Tex.

—(Lighting.)

Bylesby Engineering & Management
Corp., Chicago, Ill.
General Electric Vapor Lamp Co.,
Hoboken, N. J.
Wiley & Wilson, Lynchburg, Va.

—(Mechanical.)

Charlton & Davis, Ft. Lauderdale, Fla.
Engineering Service Corp., Houston, Tex.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engr., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Meigs, Bassett & Slaughter, Phila., Pa.
Pender, W. R., Houston, Texas.
Sanderson & Porter, New York, N. Y.
Wiley & Wilson, Lynchburg, Va.

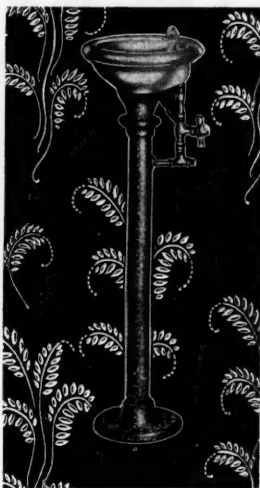
**—(Mining. See Engineers, Ge-
ological.)****—(Municipal.)**

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Huey, S. E., Monroe, La.
Knowles, Inc., Morris, Pittsburgh, Pa.
McCrory Co., The, J. B., Atlanta, Ga.
Spoon & Lewis, Greensboro, N. C.
White Co., Gilbert C., Durham, N. C.

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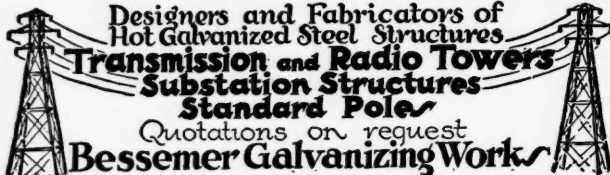
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—(Public Service Properties.)
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Bylesby Engineering & Management Corp., Chicago, Ill.
Fuller & McClintock, New York, N. Y.
Knowles, Inc., Morris, Pittsburgh, Pa.
Main, Inc., Chas. T., Boston, Mass.
Pender, W. R., Houston, Texas.
Sanderson & Porter, New York, N. Y.
White Engineering Corp., J. G., New York.

—(Railroad.)
Huey, S. E., Monroe, La.

—(Reinforced Concrete Bridges, Buildings, etc.)
Atlantic Bridge Co., Greensboro, N. C.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
McCrack & Co., J. E., Baltimore, Md.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Steel & Leiby, Knoxville, Tenn.
Tucker & Lorton, Charlotte, N. C.
Turner, C. A. P., Minneapolis, Minn.
Wheeler, Walter H., Minneapolis, Minn.

—(Sales Analysis.)
May, Inc., Geo. S., Chicago, Ill.

—(Sanitary.)
Cramer, Robert, Milwaukee, Wis.
Harris Engineering Co., Chicago, Ill.
Whitman, Requaardt & Smith, Balto., Md.

—(Sewage Disposal Plants.)
Cramer, Robert, Milwaukee, Wis.
Fuller & McClintock, New York, N. Y.
McCrack & Co., J. E., Baltimore, Md.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Sewerage and Waterworks.)
Conard, William E., Burlington, N. J.
Conover, Oliver & Quinn, Inc., Chicago, Ill.
Fuller & McClintock, New York, N. Y.
Hardaway Contracting Co., Columbus, Ga.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Knowles, Inc., Morris, Pittsburgh, Pa.
Sanderson & Porter, New York, N. Y.
Spoon & Lewis, Greensboro, N. C.
Tucker & Lorton, Charlotte, N. C.
White Co., Gilbert C., Durham, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.

—(Structural.)
Freeland, Roberts & Co., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs Nat'l Park, Ark.
Hills Company, Geo. B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
Lockwood Greene Engrs., Inc., New York.
Southern Erectors, Inc., Tampa, Fla.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.
Whitman, Requaardt & Smith, Balto., Md.

—(Textile Mills.)
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sillrine & Co., J. E., Greenville, S. C.

—(Transmission Lines.)
Hoosier Engineering Co., Chicago, Ill.

—(Ventilating and Heating.)
Willey & Wilson, Lynchburg, Va.

—(Water Supply.)
Whitman, Requaardt & Smith, Balto., Md.

ENGINES (Compressed Air.)
Dake Engine Co., Grand Haven, Mich.

—(Diesel Type.)
Fairbanks, Morse & Co., Chicago, Ill.

—(Gas and Gasoline.)
Nove Engine Co., Lansing, Mich.
Sterling Engine Co., Buffalo, N. Y.

—(Hoisting.)
Clyde Iron Works Sales Co., Duluth, Minn.

—(Marine.)
Fairbanks, Morse & Co., Chicago, Ill.

—(Oil.)
Ingersoll-Rand Co., New York, N. Y.
Continental Gas Co., Birmingham, Ala.

—(Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cole Mfg. Co., R. D., Newman, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Schmidt's Sons Co., J. S., Macon, Ga.

ENVELOPES.
Young & Seldon Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)
Martin, Joe B., Charlotte, N. C.

EXCAVATING MACHINERY.
Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., Erie, Penna.
Clyde Iron Works Sales Co., Duluth, Minn.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland.
Monaghan Mfg. Corp., Chicago, Ill.
National Equipment Corp. (Koshring, Insley, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

EXCAVATORS (Clamshell and Orange Peel.)
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., Lorain, Ohio.

—(Dragline. See Dragline Excavators.)

—(Trench.)
Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Buckeye Traction Ditcher Co., Findlay, Ohio.
Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Monaghan Mfg. Corp., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

EXPANSION JOINTS (Road and Street.)
Carey Co., Phillip, Lockland, Cincinnati, Ohio.
Servicised Products Corp., Chicago, Ill.

EXPLOSIVES.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

FACTORY Management Systems.
Ernst & Ernst, New York, N. Y.

FEED-WATER HEATERS and Purifiers.
American Water Softener Co., Phila., Pa.

FELT (Building Sheathing.)
Barrett Co., The, New York, N. Y.

FENCE POSTS (Crossed.)
Ayer & Lord Tie Co., Chicago, Ill.

FENCING Entrance Gates (Iron, Steel and Wire.)
American Steel and Wire Co., Balto., Md.
Anchor Post Fence Co., Baltimore, Md.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

—(Field and Industrial, Wire Woven.)
American Steel and Wire Co., Balto., Md.
Anchor Post Fence Co., Baltimore, Md.
Cyclone Fence Co., Waukegan, Ill.
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FERTILIZER MACHINERY.
Raymond Bros., Impact Pkwy. Co., Chicago.

FILTER (For Domestic and Industrial Purposes.)
American Water Softener Co., Phila., Pa.
Bacharach & Co., R. W., Kansas City, Mo.
International Filter Co., Chicago, Ill.
Roberts Filter Mfg. Co., Darby (Phila.), Pa.

—Cloth.
Newark Wire Cloth Co., Newark, N. J.

FINANCING.
Electric Bond & Share Co., New York.
Garraway & Co., S. G., Chicago.
Gay & Co., W. O., New York, N. Y.

FIRE EXTINGUISHERS.
Myers & Bro. Co., The F. E., Ashland, O.

FIREPROOF Building Material.
Bannon Pipe Co., Louisville, Ky.

—Doors and Shutters.
Kinneer Mfg. Co., The, Columbus, Ohio.
Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)
Leschen & Sons Rope Co., A., St. Louis.
Reebing's Sons Co., John A., Trenton, N. J.

FLANGES (Iron and Steel.)
Amer. Cast Iron Pipe Co., Birmingham.
Dart Mfg. Co., E. M., Providence, R. I.
National Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.

—(Swivel.)
Marco Nordstrom Valve Company, San Francisco, Cal.

—and Flanged Fittings.
Grinnell Co., Inc., Providence, R. I.

FLOOR (Asphalt Mastic.)
Barber Asphalt Co., Philadelphia, Pa.

—(Asphalt Plank.)
Servicised Products Corp., Chicago, Ill.

—(Cork Composition.)
Congoleum-Nairn, Inc., Kearny, N. J.

—(Hardwood, Maple, Oak.)
Kirby Lumber Co., Houston, Tex.
Nashville Hardwood Flooring Co., Nashville, Tenn.

—(Linoleum.)
Congoleum-Nairn, Inc., Kearny, N. J.

—(Northern Hard Maple.)
Holt Hardwood Co., Oconto, Wis.

—(Open Steel.)
Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

—Covering.
Congoleum-Nairn, Inc., Kearny, N. J.

—Hardner (Concrete.)
Sennepson Sons, Inc., L., New York.

—Plates and Stair Treads.
Central Iron & Steel Co., Harrisburg, Pa.
Byerson & Son, Inc., Jos. T., St. Louis and New York.

—Steel (For Concrete Culverts, Roads, Streets.)
Blaw-Knox Co., Pittsburgh, Pa.

—Wax.
Congoleum-Nairn, Inc., Kearny, N. J.

FLUSH-TANK SIPHONS.
Pacific Flush-Tank Co., New York, N. Y.

FORM CLAMPS.
M & M Clamp Co., Minneapolis, Minn.

FORMS, Steel (For Concrete Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)
Blaw-Knox Co., Pittsburgh, Pa.

FOUNDRIES and Machine Shops.
Deemer Steel Casting Co., New Castle, Del.
General Machine Works, York, Pa.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Mountain State Steel Foundries, Parkersburg, W. Va.
Richmond Foundry & Mfg. Co., Richmond, Va.

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Hill & Griffith Co., Cincinnati, O.

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—(Water-Cooled.)
Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

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—Steel and Iron.
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Granite City Steel Co., Granite City, Ill.
Superior Sheet Steel Co., Canton, Ohio.

GALVANIZING (Cadmium Plating.)
Birmingham Galvanizing Co., Birmingham, Ala.

—(Hot Dip.)
Bessemer Galvanizing Works, Birmingham.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Newport News Shipbuilding & Drydock Co., Newport News, Va.

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International Derrick & Equipment Co., Columbus, Ohio.

GAS HOLDERS.
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Chicago Bridge & Iron Works, Atlanta, Ga.

—Producers.
Gas-O-Flame Stove Works, Port Deposit, Md.
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GASOLINE and KEROSENE.
Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)

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Earle Gear & Machine Co., Phila., Pa.
General Electric Co., Schenectady, N. Y.
Woods' Sons Co., T. B., Chambersburg, Pa.

—(Worm Reduction.)
DeLaval Steam Turbine Co., Trenton, N. J.

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General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)
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Randle Machinery Co., The, Cincinnati, O.

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Hires Turner Glass Co., Philadelphia, Pa.
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Southwestern Sheet Glass Co., Okmulgee, Okla.

—(Wire.)
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—(One Man Motor.)
Adams Co., J. D., Indianapolis, Ind.

—(Leaning Wheel Road.)
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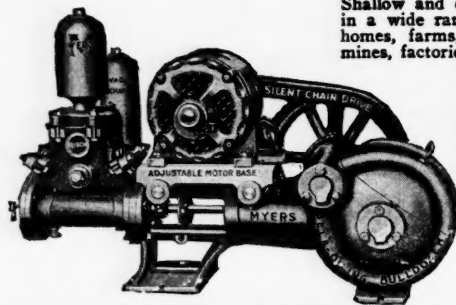
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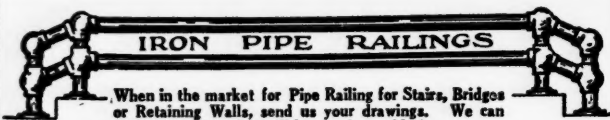
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Ingersoll-Rand Co. (A. S. Cameron Steam Works), New York, N. Y.

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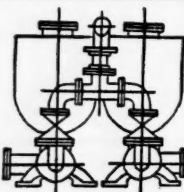
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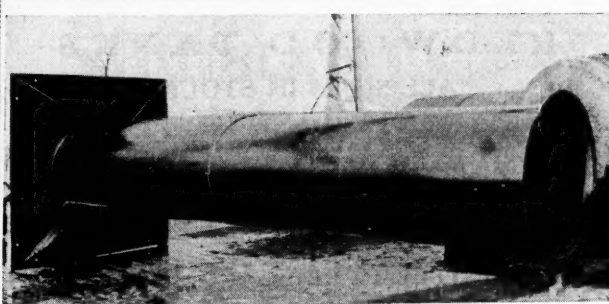
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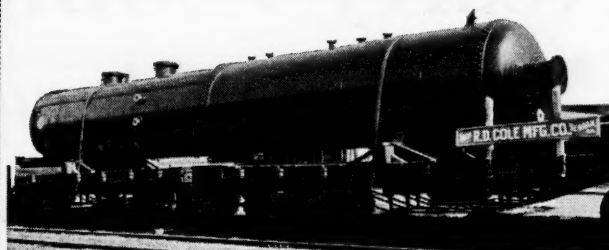
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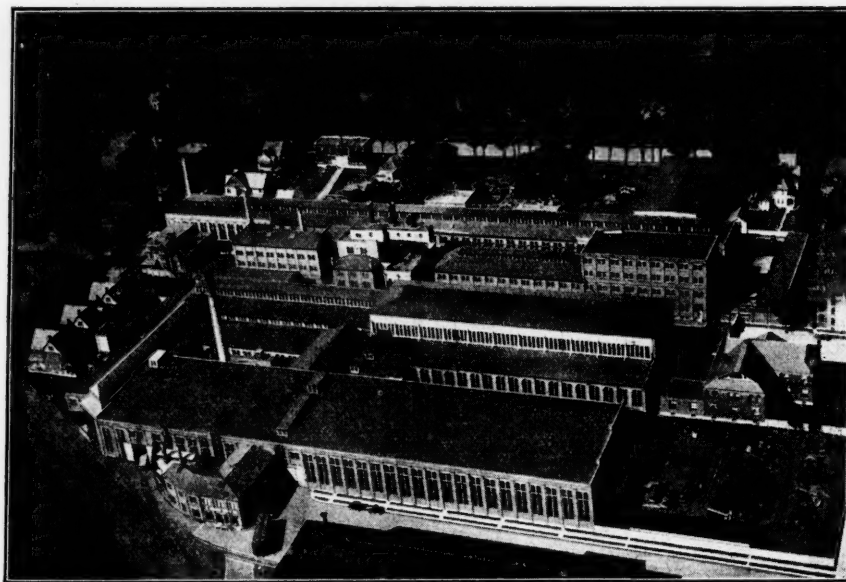
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11-6-30

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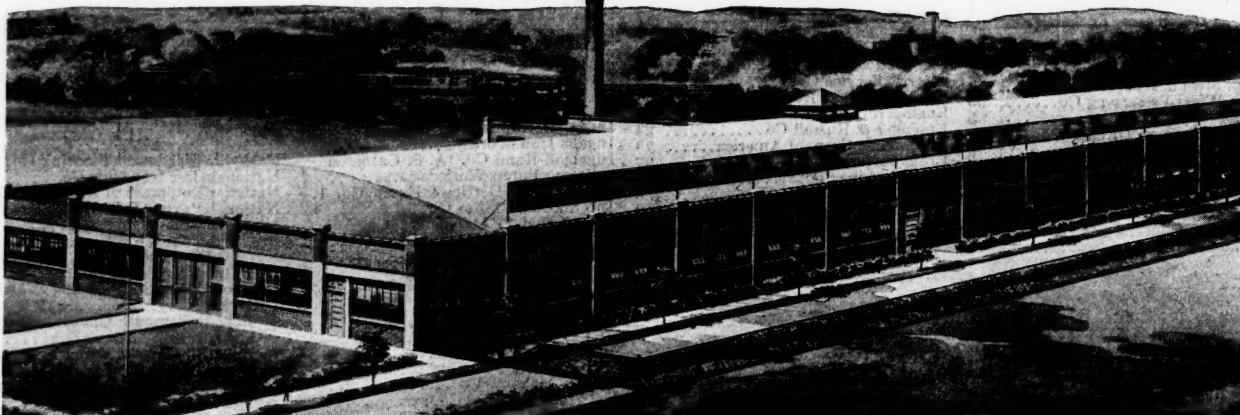
Every user of wire cloth should have a copy of our Catalog No. 26 at his finger's ends.

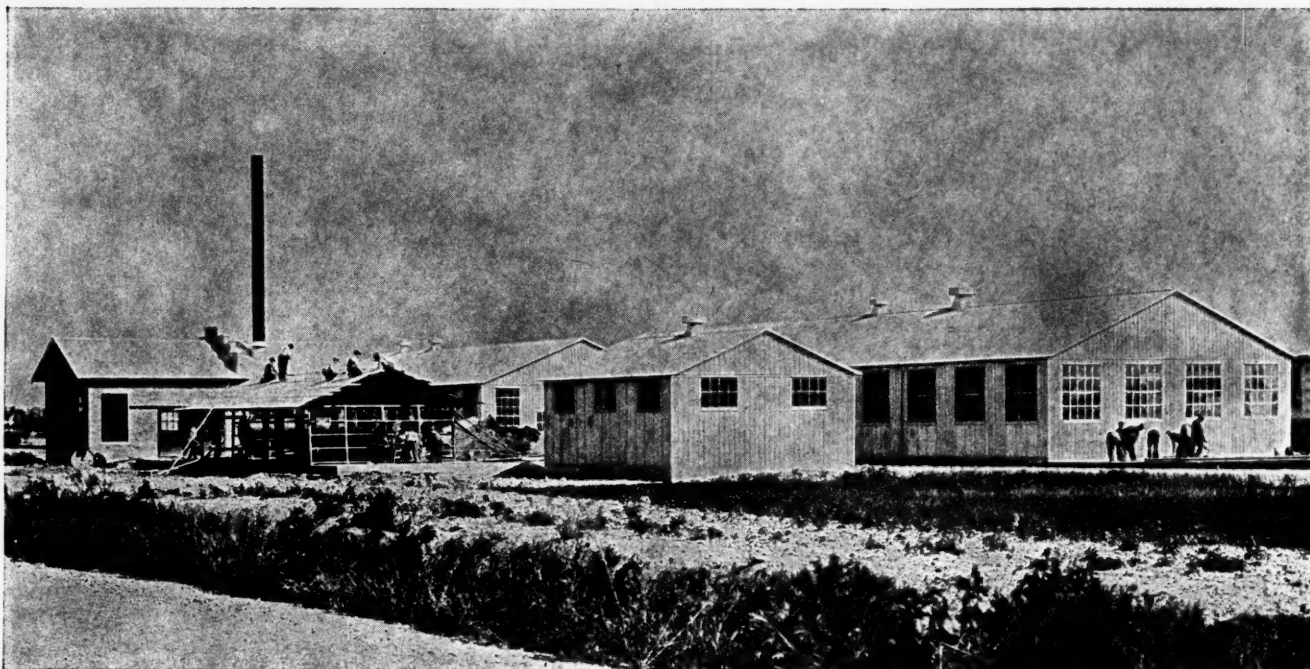
NEWARK WIRE CLOTH COMPANY

360-374 Verona Ave.,

Newark, N. J.

Branch Office: 66 Hamilton St., Cambridge, Mass.





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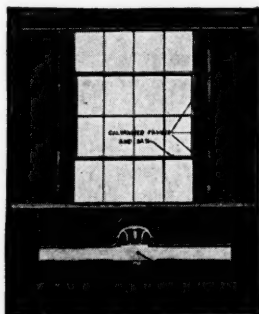
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The prices of IDECO Buildings are low because of IDECO manufacturing methods. The use of quality materials and the complete protection against rust and corrosion insure long life and eliminate constant up-keep expense.

Being built entirely of metal, a worth-while saving can be made on insurance rates. Because of their long life, ease of dismantling and re-erection with 100 per cent salvage, IDECO buildings have a high resale value.

From a single small building to a shop or plant, there is practically no use for which IDECO buildings are not suited. They can be selected, erected and occupied within a few weeks after purchase.

To help executives plan their buildings, IDECO engineers and building specialists are sharing their knowledge of what others are doing and applying it to the customer's individual requirements. A 'phone call or letter will place these building experts at your service at once, with no obligation on your part. Please call on us.



IDECO insulated buildings offer the same protection as a structure built of 13" brick or 20" concrete wall. Moreover the method of applying this insulation retains the sectional feature.

THE INTERNATIONAL DERRICK & EQUIPMENT COMPANY

Columbus, Ohio	Beaumont, Texas	Los Angeles, Calif.
New York	Marietta	Wichita
	Houston	Shreveport
Buenos Aires, Argentine		Maracaibo, Venezuela

Foreign Representative: Armco International Corp.



Ingot Iron

Used for sheeting, Frames
and Sash.

Hot Dip Galvanizing.

Complete Rust Protection.

TRIFLES

MAKE PERFECTION

The powerful Center Drive design . . . plus unlimited attention to the hundreds of little details that make for smoother operation, greater ruggedness, greater safety and increased yardage . . . this is what Thew Lorain engineers put into Lorain machines. They realize that split-seconds saved on each pass of the dipper mount up to surprising totals in the course of the job. Listed here are a few of the many little details that save split seconds and increase output for the owners of Thew Lorain machines.

THE THEW SHOVEL COMPANY
LORAIN, OHIO



THEW-LORAIN

45

55

75

Southeast Sales Office
1514-13 William Oliver Bldg., Atlanta, Ga.

Southwest Sales Office
1415 Magnolia Bldg., Dallas, Texas

Tremendous Trifles

Automatic Dipper Trip

Not necessary to take the hands off control levers . . . the engine trips the dipper. Good for 10 more truck loads a day.

Booster Bands

Uses engine power instead of the operator's muscle to engage the clutches.

Swing Brake

Quicker, more accurate swing control.

Automatic Crowd Brake

Automatically prevents back drift of the stick. Saves power. Saves the operator's time.

Chain Crowd

High efficiency, positive transmission of power, self-adjusting to all boom angles.

Interchangeable Lagging

Flexibility that gives extra speed for easy digging . . . extra power for tough digging.

Simplified Controls

In the shovel: 3 levers, 1 foot pedal.
In the crane: 2 levers, 2 foot pedals.

Foot pedals

Automobile type— as comfortable as an old pair of shoes.

